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THE APPROXIMATE VITAMIN REQUIREMENTS OF HUMAN BEINGS

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Most of the research on vitamins and nutrition is directed ultimately to the solution of problems of human nutrition. In a war situation such as ours it is particularly desirable that we be able to apply whatever we may know or learn to practical ends.

A fully adequate idea of the requirements of human beings for the various vitamins could presumably be obtained only as a result of a series of extended controlled studies using human subjects. Even if it were feasible to plan and carry out experiments of this type just as animal experiments are planned and carried out, individual differences, assuming that small numbers of subjects were used, would doubtless make the results very irregular.

Recently we have developed assay methods for a number of the B vitamins,[1] and because of an increased accumulation of information from various sources it becomes possible to state more definitely the vitamin contents of various foods and tissues. It appears now that this information makes it possible to obtain very simply a considerable amount of desired information regarding probable human requirements.

A study of the vitamin contents of (1) a well rounded mixed diet which might be recommended for human beings and (2) a widely used commercial animal food which promotes excellent performance in omnivorous animals shows that these more or less ideal diets, when compared on an isocaloric basis, contain a relatively constant amount of the various B vitamins. This comparison is made more striking when the carcass of a mammal (rat) is also compared. Again, on the same calory basis, the content of B vitamins agrees approximately and never is there disagreement by more than a factor of two. Where there is good agreement between these three independent materials there is a strong presumption that the amounts associated with 2,500 calories represent the approximate human requirement, assuming of course that the substance in question is actually a vitamin for human beings and cannot be synthesized in the body.

The indicated well rounded simplified diet, made up of natural foods, was formulated on the basis of modern nutritional knowledge but without regard to its content of B vitamins. Presumably any one of a number of other mixed diets would yield results similar in this regard. It is doubtful if any diet could be selected which a priori would be known to be superior to the one chosen. It contains "protective foods" but not in obvious excess and is sufficiently diversified so that every nutrient should be amply provided. Enough milk and orange juice were included to insure good supplies of calcium and ascorbic acid respectively, but other considerations regarding specific needs were disregarded. The diet as indicated was completely settled on before any calculations regarding its content of B vitamins were made.

No claim can be made that the assay values are without error or that the total values derived from their consideration are in any sense final. Individual samples of foodstuffs vary in their content of B vitamin, but since the diet is made up of a number of constitutents and often a number of samples were averaged, these variations doubtless tend to cancel out. There is no reason to think that the values obtained for any of the vitamins are consistently high. If enzymatic extraction is incomplete in any case, the values, of course, would tend to be low.

The animal food chosen (two samples obtained at different times of year) was a widely used commercial article suitable for rats, mice, dogs, cats and monkeys and which yields most excellent results, at least with the commoner laboratory animals. It is a mixed meat, milk and cereal diet containing various special additions including yeast and vitamin concentrates. Because the diet is the result of a large amount of research and yields excellent results, its general adequacy cannot be questioned. There are economic reasons why it would not be expected to contain the vitamins in excess. Concentrates and special additions are expensive and would naturally be used only on the basis of proved value.

An inspection of table 2 indicates that the following probably represent perfectly "safe" levels for daily intake of B vitamins by human beings, even under conditions of pregnancy and lactation: thiamine 3.2 mg., nicotinic acid 40 mg., riboflavin 3.7 mg., pantothenic acid 11 mg., biotin 0.14 mg., inositol 1,000 mg., pyridoxine 1.5 mg. and folic acid 1.0 mg. unit. It is not certain, of course, that all the B vitamins in the last four substances are actually required by human beings. Regardless of this fact, the vitamins actually occur in foods to about the extent indicated.

The National Research Council Committee on Foods and Nutrition has recently given careful study to the vitamin requirements of human beings. On the basis of available information the thiamine requirement, on a 2,500 calory basis, has been estimated at 1.5 mg. daily. During pregnancy and lactation this is raised

I have received valuable assistance from my colleagues. The Williams-Waterman Fund of Research Corporation made a special grant and the Clayton Foundation of Houston, Texas, furnished the support which has made our testing program possible.

1. Studies on the Vitamin Content of Tissues: I. University of Texas Publication 4137, 1941.

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(figured on the same calory basis) to 1.8 mg. and 1.9 mg. respectively. The lowest figure is about the content of cow's milk and is higher than the content of human milk and therefore may be high enough. However, on the basis of the figures given in table 2, one might conclude that the values given are too low for absolute safety. Considering the whole rat carcass as a "complete" food, its thiamine content appears low in comparison until the low carbohydrate content is considered.

The National Research Council Committee has estimated the nicotinic acid requirement of man as 15 to 20 mg. a day (2,500 calories). Elvehjem has placed it at 25 mg. a day. The two diets furnish an adequate supply even on the latter basis. The higher content of the rat carcass may be correlated with the rat's ability to synthesize nicotinic acid.

The human riboflavin requirement has been estimated at 2.2 to 2.5 mg. daily (2,500 calories). According to the figures given in table 2, one would conclude that

TABLE 1.—*Vitamin B Content of Foods*

Constituent	Per Cent of the Calories	Thiamine, Mg.	Nicotinic Acid, Mg.	Riboflavin, Mg.	Pantothenic Acid, Mg.	Biotin, Mg.	Inositol, Mg.	Pyridoxine, Mg.	Folic Acid, Mg. Unit
Whole milk	20	0.3	0.4	1.4	2.2	0.06	160	0.20	0.100
Whole wheat	30	1.0	11.5	0.34	2.4	0.01	350	0.44	0.566
Lean meats									
Beef	9	0.07	10.0	0.4	1.0	0.01	21	0.11	0.043
Pork	9	1.5	7.0	0.2	0.7	0.01	8	0.11	0.025
Liver	2	0.07	5.0	1.0	2.4	0.13	23	0.02	0.057
Potatoes	10	0.2	3.6	...	1.0	0.002	87	0.66	0.390
Butter	5	*	*	*	*	*	*	*	*
Eggs	6	0.2	*	0.04	0.2	0.002	1	*	*
Fresh peas	4	0.15	2.0	0.14	0.7	0.014	162	0.05	0.194
Fresh carrots	4	0.1	0.6	0.15	0.6	0.012	235	0.16	0.285
Orange juice	2	*	*	*	*	*	*	*	*
Total	100	3.6	40.1	3.67	11.2	0.25	987	1.77	1.39

* The amount of these foods is small enough so that they contribute a negligible amount of the B vitamin in question to the diet.

for perfect safety this figure should be increased by about 60 per cent.

No one has, so far as I know, ventured an estimate of the human requirement of pantothenic acid, but it appears safe now to conclude that it cannot be far from 10 mg. a day. The validity of this estimate is increased by the fact that cow's milk yielded 10.5 mg. per 2,500 calories, and human milk 10.9 mg. per 2,500 calories.

The pyridoxine requirement, following the same line of reasoning, appears to be about 1.5 mg. a day, that of "folic acid" (assuming it to be required) about 1 mg. unit a day, and that of biotin about 0.15 mg. a day.

Inositol is predominantly from vegetable sources, as shown in table 1, and the amount associated with 2,500 calories of food varies tremendously, depending on the source. A good mixed diet yields 1 Gm. a day or more.

Assays of various organisms from different portions of the biologic kingdom (mammals, insects, bacteria, yeasts, higher plants) indicate that all eight of the B vitamins considered are always present. There appears, particularly in the case of thiamine, nicotinic acid, riboflavin and pantothenic acid, a definite tendency toward parallelism in the content of whole organisms. Yeasts, for example, are five to ten times as rich as the mixed diet in each of these four vitamins. Insects (cockroaches and termites), on the other hand, are in every case two to four times as rich in these vitamins as the mixed diet. The other B vitamins tend to be more evenly distributed in the lower and higher forms of life. It thus appears that the tentative human requirements mentioned are parallel to but much lower than the amounts (figured on an isocaloric basis) which insect eating birds or yeast eating insects obtain.

TABLE 2.—*Vitamin B Content of Various Materials (2,500 Calories)*

	Thiamine, Mg.	Nicotinic Acid, Mg.	Riboflavin, Mg.	Pantothenic Acid, Mg.	Biotin, Mg.	Inositol, Mg.	Pyridoxine, Mg.	Folic Acid, Mg. Unit
Mixed diet	3.6	40.1	3.67	11.2	0.25	987	1.77	1.39
Dog food	2.8-4.4	40-24	3.7-6.2	10-10.9	0.114-0.14	1,170-2,909	1.86-1.13	0.66-0.94
Rat carcass	1.86	68.0	4.03	14.9	0.124	217	0.93	1.56

It is obvious that for various reasons (economic inability, use of decorticated grains, losses in cooking and cooking water, use of refined sugar and other "refined" foods) most people do not get as much of the various B vitamins as they probably should have.

What can be done to supplement this lack? One of the means which has been indorsed by some members of the medical profession is the prescription of vitamin B complex preparations, which are usually derived from yeast or liver and often fortified with those synthetic vitamins which are available.

Unfortunately, while yeast and liver are rich sources of B vitamins, both known and unknown, they do not necessarily yield extracts which are extraordinarily rich. The B vitamins occur in bound form and are freed only by some type of digestion (autolysis or otherwise). When digestion is used to free the vitamins, much other soluble material is formed which contaminates the extract. One commercial brewers' yeast extract (from autolyzed yeast) was assayed for the eight B vitamins considered and found to be a good source of each. A calculation showed however that, in order to get enough of the B vitamins to equal the intake on a good diet, one would have to consume

TABLE 3.—*Constituents of Average Daily Adult Dose of "Vitamin B Complex" as Sold by Six Representative Drug Houses*

	Thiamine, Mg.	Riboflavin, Mg.	Nicotinic Acid, Mg.	Pantothenic Acid, Mg.	Pyridoxine, Mg.
1	2.5	0.62	5.0	0.9	0.330
2	1.0	1.0	0.15	0.225	0.035
3	3.0	2.0	20.0	1.0	1.0
4	0.75	0.25	...	...	0.25
5	2.5	0.7	35.0	...	0.56
6	3.0	1.0	10.0	0.6	0.5
Amounts contained in well rounded diet (2,500 calories)	3.0	3.7	40.0	11.0	1.5

10 per cent of one's calories in the form of this yeast extract (7 to 8 teaspoons of dry powder). In a preparation such as this the physician could hardly expect to find a therapeutic agent of pronounced value. Extracts or preparations which are worthy of consideration should be plainly labeled as to their content of the various B vitamins and enough should be present to allow significant dosage. For correction of a deficiency

it may be desirable in some cases to give several times the ordinary daily intake.

A survey of a number of representative vitamin B complex preparations with regard to their content of B vitamins is summarized in table 3. It is apparent that these preparations are in general wholly inadequate as sources of the vitamin B complex. Several of them may be of value because of their fortification with thiamine, nicotinic acid or riboflavin, but they fail to contain anything like "balanced" amounts of the various B vitamins.

My purpose in this article is to point out that the approximate human requirements for various of the B vitamins can now be estimated with some reliability. Many American diets are doubtless low in these essential substances. Attempts to correct these deficiencies must be made intelligently and with full knowledge of what the requirements are and the contents of the proposed remedial agents. The present economic waste involved in the production and sale of preparations of questionable value must be large.

THE ABSORPTION OF VITAMIN A IN TUBERCULOSIS

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In studies on man relating to vitamin A, reduced ability to absorb the vitamin was found in 1 patient with old intestinal tuberculosis. This suggested that investigation of patients with intestinal symptoms associated with tuberculosis should be made by means of the vitamin A absorption test.

This vitamin A absorption test is somewhat similar to the dextrose tolerance test. The patient is given a known amount of vitamin A in the form of a concentrated fish liver oil by mouth (7,000 U. S. P. units per kilogram of body weight). Blood samples are taken before the oil is given and at four, eight and twenty-four hours after the ingestion of the oil. These blood samples are then analyzed chemically for the vitamin A concentration.[1]

Normally there is a decided rise in the blood concentration of vitamin A which usually reaches a peak at the fourth hour. Since vitamin A is fat soluble this test probably gives an index of the absorption of other fat soluble vitamins as well as fat itself. It has been shown that in several diseases in which fat digestion is disturbed the absorption of vitamin A is poor and the vitamin A absorption curve obtained is "flat." Thus in celiac disease [2] cystic fibrosis of the pancreas,[3] intestinal obstruction,[4] catarrhal jaundice and other hepatic diseases [5] the vitamin A absorption is abnormal.

The utilization of fat soluble vitamins and the fats themselves is obviously important in tuberculosis. Accordingly 29 patients with active pulmonary tuberculosis and intestinal symptoms were selected for preliminary study. Most of the patients had moderately to far advanced pulmonary tuberculosis and at least some intestinal symptoms.

These patients were divided into two groups: 16 patients with mild or slight intestinal symptoms and 13 patients with moderate to severe intestinal symptoms. On a basis of clinical symptoms (cramps, diarrhea and pain) most of the latter group would be classified as having intestinal tuberculosis. However, 7 of these patients subsequently died and came to autopsy. In only 2 of these 7 were significant pathologic changes found in the intestinal wall, and these changes were found, as is usual, in the large bowel. Because of the difficulty of judging the degree of tuberculous intestinal involvement clinically, and because the patients' condition did not warrant extensive studies, we have divided our patients on this symptomatic rather than a pathologic basis.

No patient had an elevation of temperature at the time of the test.

As controls we used twenty-seven vitamin A absorption tests done on 25 supposedly normal adults.

RESULTS

The results of the tests are recorded in the accompanying table. It will be noted that the mean maximum rise in vitamin A in the blood of normal persons was approximately twice that of all patients with tuberculosis. Furthermore, the blood of tuberculous patients with mild intestinal symptoms reached, on the average, twice the level of those with moderate or severe symptoms. Although there was considerable variation in individual cases, differences in the means are statistically significant. The maximum rise in concentration of vitamin A occurred at the fourth hour in 72 per cent of the patients with tuberculosis and in 70 per cent of the normal subjects. In the remaining subjects the maximum level was reached at eight hours.

If the degree of weight loss (weight at the time of test compared with standard weight for age and height) is correlated with the ability to absorb vitamin A, one finds that there is a moderate correlation (correlation coefficient is 0.528 ± 0.10 using method of rank-difference correlation). In other words, the more underweight, on the average, that the tuberculous patient is, the less able he seems to absorb vitamin A well.

COMMENT

Our studies do not indicate the reason for lessened absorption of vitamin A in severely sick patients with tuberculosis. Fever, however, played little or no part, since most of the patients were afebrile at the time of the test. Actual tuberculous disease of the intestine, liver or pancreas probably was not a factor, for in the majority of patients who came to autopsy (all except 1 of whom absorbed vitamin A poorly) no gross or microscopic lesions were found in these organs which one would expect to interfere with the function of fat absorption. What functional derangement of absorption occurs, therefore, can only be surmised. In this

Dr. Carl Nielson of the Abbott Laboratories supplied us with the fish liver oil used in these tests.

From the Department of Pediatrics of the University of Rochester School of Medicine and Dentistry and Iola Sanatorium.

Mr. Arthur Kornberg and Miss Lolita Pannell performed the vitamin A aborption tests on 20 of the normal controls used in this study. These tests were done in the Department of Medicine of the University of Rochester School of Medicine and Dentistry.

1. The methods for the determination of vitamin A and of carotene and xanthophyll are given in detail elsewhere (Dann, W. J., and Evelyn, K. A.: Method for Vitamin A Determination, Biochem. J. **32**: 1009 [June] 1938. Clausen, S. W., and McCoord, Augusta B.: Method for Carotene and Xanthophyll, J. Biol. Chem. **113**: 89 [Feb.] 1936).

2. Chesney, Jack, and McCoord, Augusta B.: Proc. Soc. Exper. Biol. & Med. **31**: 887 (April) 1934. Breese and McCoord,[4] May and McCreary.[3]

3. May, C. D., and McCreary, J. F.: J. Pediat. **18**: 200 (Feb.) 1941.

4. Breese, B. B., and McCoord, Augusta B.: J. Pediat. **15**: 183 (Aug.) 1939.

5. Breese, B. B., and McCoord, Augusta B.: J. Pediat. **16**: 139 (Feb.) 1940.

connection the recent report of Sheely [6] on prothrombin deficiency in pulmonary tuberculosis is of interest. He showed in a series of 106 cases of tuberculosis that significant deficiency of prothrombin occurred in 51. In general, the more severe the tuberculosis, the more frequent was this deficiency. He felt that the toxemia resulting from the tuberculosis was related to the prothrombin concentration. Since vitamin K is, like vitamin A, fat soluble, this deficiency may result from poor absorption of vitamin K. Thus those factors in tuberculosis which cause poor absorption of vitamin A may also cause poor absorption of vitamin K.

Practically, however, there is some direct experimental basis for the clinical practice of giving large amounts of fat-soluble vitamins to patients with tuberculosis. In order to give adequate amounts of these vital substances to these patients more than the normal requirement should be given, especially if the patient has intestinal symptoms or noticeable loss of weight.

Distribution of Maximum Rise in Blood Level of Vitamin A in Normal and Tuberculous Persons

	Evelyn Photoelectric Units of Vitamin A										
	Under 100	100-199	200-299	300-399	400-499	500-599	600-699	Total Number	Mean	Standard Error of Mean	Standard Deviation
"Normal".....	4	2	4	4	7	4	2	27	354	36	181
All patients with tuberculosis...	11	8	3	4	2	0	1	29	160	29	149
Mild intestinal symptoms.....	3	5	3	2	2	0	1	16	243	42	169
Moderate to severe intestinal symptoms.....	8	2	1	2	0	0	0	13	127	31	117

SUMMARY

The absorption of vitamin A by 29 patients with severe pulmonary tuberculosis and variable degrees of intestinal symptoms was tested by means of the "vitamin A absorption test." The absorption of vitamin A by these patients was poorer than that by normal persons. Furthermore, the greater the degree of weight loss and the more severe the intestinal symptoms, the poorer, on the average, was their ability to absorb vitamin A. The explanation of this was not found at autopsy.

These facts give some experimental basis for the clinical teaching that the vitamin content of the diet of the patient with tuberculosis should be above the average requirement.

6. Sheely, R. F.: Prothrombin Deficiency in Pulmonary Tuberculosis, J. A. M. A. **117**:1603 (Nov. 8) 1941.

The Linkage of Cause and Effect.—If the gulf seems wide between the scientific method in science and the scientific method applied to social problems, we can be sure that time and rational effort will narrow it. Public health is now not a matter of prayer but of swift action. The public is educated to the need for control of epidemics because cause and effect have become scientifically linked on the level of public understanding. If tariffs, social security measures and unemployment were also reducible to similar linkages of simply expressed cause and effect we might have a safer and haprier future. In some complex problems, however, the linkage of cause and effect is not simple. It is hard to find proposition number one. Instead of one cause for unemployment there are a half dozen at least.—Bowman, Isaiah: Enduring Purpose, *Assn. Am. Coll. Bull.* **26**:194 (May) 1940.

HISTAMINE IN THE TREATMENT OF MÉNIÈRE'S SYNDROME

AN APPRAISAL

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The publication in 1940 by Shelden and Horton [1] from the Mayo Clinic of a paper on the successful treatment of Ménière's syndrome with histamine naturally caused a stir in the medical world. When to the value which is always attached to work from that institution was added the dramatic movie demonstration, at the annual meeting of the American Medical Association in the same year, of several acutely dizzy patients who, given an intravenous injection of histamine, immediately rose from their beds and walked, the reputation of histamine for the treatment of this condition was obviously assured, at least for a time. Since then it has been widely used and widely discussed.

Yet even at that time there were grounds for doubt as to whether histamine was really the wonder worker that it seemed to be. These doubts were voiced in a paper [2] which, written at that time (July 1940) and containing the results of some clinical experiments conducted during the previous twelve months on patients with Ménière's syndrome, was later published in THE JOURNAL. In the year which has followed that writing, experience has accumulated which seems to prove those doubts to have been well founded, and it is to this experience and to some confusion evident in the minds of colleagues that the present communication is due.

Shelden and Horton advocated the use of histamine in all cases of Ménière's syndrome without exception and claimed immediately satisfactory results in a large proportion of cases. These results, however, have not always been maintained, even for patients who faithfully followed the maintenance regimen laid down by the authors. What proportion of cases has relapsed is not known, but that some have is shown by the fact that I have personal experience of 4 and reliable knowledge of 4 more. Moreover, results with histamine administered by a somewhat different method to patients of the histamine insensitive group have, as will be seen, been far from satisfactory.

In the paper mentioned,[2] reasons were given for believing that cases of Ménière's syndrome did not all own the same etiology, but that they could be divided into two groups distinguishable by an intradermal test for histamine sensitivity, which was described. Further experience has only gone to confirm this finding. Unfortunately, to judge by inquiries received, this principle does not seem always to have been understood. So firmly has histamine become incorporated in the mind of the profession with Ménière's syndrome that it is still being used in cases for which, if the thesis of two groups is correct, it is not suitable. My purpose in this paper is to show reason why it is believed that the use of histamine for all cases indiscriminately is unwise.

THE TWO GROUPS OF MÉNIÈRE CASES

To recapitulate briefly the principle mentioned, there is one group, and that the smaller one comprising less than a fourth of all cases, which is histamine sensitive

From the Department of Surgery (Otolaryngology), the New York Hospital, and Cornell University Medical College.

1. Shelden, C. H., and Horton, B. T.: Treatment of Ménière's Disease with Histamine Administered Intravenously, Proc. Staff Meet., Mayo Clin. **15**:17 (Jan. 10) 1940.

2. Atkinson, Miles: Observations on the Etiology and Treatment of Ménière's Syndrome, J. A. M. A. **116**:1753-1760 (April 19) 1941.

to the cutaneous test. As was shown in the original paper, this group can be treated effectively by gradual desensitization to histamine. Further experience has not altered this opinion, though it has been found that sometimes a second and even a third short course may be necessary just as it may be necessary to repeat a vaccine. But it must be insisted that, if success is to be achieved, the criteria laid down for the intradermal test must be rigidly adhered to. To judge an intradermal test with histamine by the criteria for an intradermal test with ordinary allergens is to fall into error, for histamine is an irritant substance and produces even in normal subjects a considerable reaction. As in all departments of medicine, a knowledge of the normal is necessary here in order to assess the abnormal. Experience has shown that dermal reactions which are normal are commonly read as abnormal, or positive, by those without previous experience of the test. But given that the patient shows a true positive cutaneous reaction to histamine, the results of desensitization are eminently satisfactory.

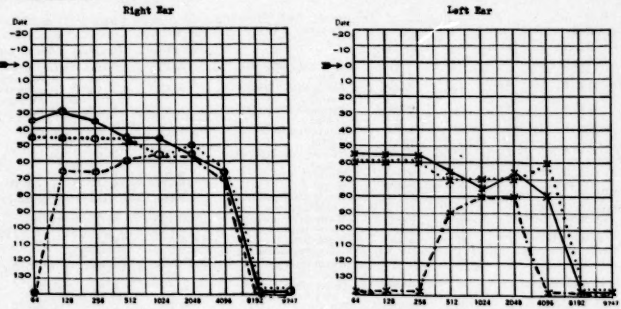
The second and much the larger group, which shows a normal cutaneous reaction to histamine, cannot be treated satisfactorily by histamine at all, except over a short period of time, virtually the time of the acute attack. The reason for this is that the attack in the larger group of patients, the group insensitive to histamine, is due to a vasoconstrictor mechanism. The evidence for this statement also is given in the original paper. Now if vasospasm is accepted as the underlying mechanism of the attack in this, the larger, group it is easy to understand why histamine acts in the acute phase as Shelden and Horton have shown that it does. Histamine is well known as a powerful peripheral vasodilator, and because of this effect it overcomes the vasospasm producing the attack and so relieves the patient. But any peripheral vasodilator will do the same thing. I [2] have recorded cases in which acute attacks have been relieved by amyl nitrite and acetylcholine, as also the satisfactory results obtained by using nicotinic acid over prolonged periods in the treatment of this group. Since the publication of that paper, acute attacks in 2 other cases have been immediately relieved, on two occasions by the intravenous use of sodium nitrite (0.1 Gm.) and on one occasion with nicotinic acid 50 mg. given intravenously, that is to say, by two other vasodilator drugs. It would thus seem probable that histamine by intravenous drip as recommended by Shelden and Horton, acts not by reason of any virtue in itself qua histamine but only by virtue of its action as a vasodilator.

If the objection to histamine were only that it has no specific action other than its vasodilator effect, it would be a small matter. It might serve its turn here, as does ergotamine in migraine headache, by relieving the acute attack even though it has no effect in preventing a recurrence. But there is more to it than that. Histamine repeated at regular intervals as a maintenance dose in this group of cases may and often does produce, or at least is followed by, an increased frequency and severity of attacks, and sometimes an increase of deafness which can be shown objectively in an audiogram (as illustrated). One patient (V. K., 15) said that she had the three most severe attacks in her experience while under treatment with histamine by the rapid method which Horton recommends.

RESULT OF HISTAMINE TREATMENT IN THE VASOCONSTRICTOR GROUP

The satisfactory results of histamine treatment in the vasodilator group have already been mentioned.[2] Details have been given in the original paper. In the vasoconstrictor group 15 persons were treated with histamine, 11 by me and 4 elsewhere who have since come under my care. Two of these were treated at the Mayo Clinic, the third in another clinic strictly according to detailed instructions from Dr. Horton and the fourth according to the Horton method as published.

The 11 personal cases came to be treated with histamine in the early days of working out the histamine cutaneous test, when positives were eagerly looked for and doubtful appearances were enthusiastically read as positive which it was later learned should have been read as negative. In consequence these wrongly grouped cases were treated with histamine, but by the slow desensitization process that I described, not in the manner described by Shelden and Horton. Actually in the two the principle is the same, though the details differ.



Audiograms in case 11 (histamine insensitive, vasoconstrictor). Solid line, before treatment; line of dots and dashes, after mistaken histamine treatment; dotted line, restoration with nicotinic acid.

Of the 11 misgrouped cases treated according to the method I described, 2 improved slowly throughout the course until at the end they were free from even minor spells of vertigo. Since then they have been given only nicotinic acid and have remained well. Seven showed immediate improvement for a time (vasodilator action) and then relapsed, 1 after one injection, 4 after two or three injections, 2 after several injections, while 1 patient who relapsed experienced attacks of vertigo of increased frequency and severity. Two were immediately and progressively worse and treatment had to be stopped. In 4 cases tinnitus increased and the audiogram dropped sharply, in 1 quite precipitously and it was many months before hearing again returned to its previous level (shown in the audiograms). In the other 7 cases deafness and tinnitus were unaffected.

Of the 4 patients treated elsewhere, 1 experienced "temporary results—or coincidental remission of attacks—then no relief." Two others experienced no remission; in fact, attacks increased somewhat in severity without noticeable change in hearing or tinnitus; the

fourth similarly experienced no remission, but instead an increase not only in vertigo but in deafness and tinnitus as well.

In contrast to these unsatisfactory results of treatment with histamine in the vasoconstrictor group are the results of treatment with nicotinic acid. All the 15 patients in this series have been subsequently treated with nicotinic acid with the exception of 3: patient 8, who has been lost, patient 10, who improved for a time on nicotinic acid after histamine had made him worse, then relapsed and has been lost sight of, and patient 15, who has only just come under observation.[3] Two had already been relieved of attacks by histamine and have remained well since on nicotinic acid as already stated (patients 1 and 2). The remaining 10 have all been relieved of attacks over periods varying from three to eighteen months, except patient 12, severely ill, who at one time was having attack after attack. She was rapidly relieved by nicotinic acid, but when a reduction in dose was attempted (in August 1941) she relapsed after three weeks and started to have daily attacks again. Stepping up the dose of nicotinic acid promptly stopped them (illustrative case 1).

Results of Treatment with Histamine in Fifteen Cases of Vasoconstrictor Type

Patient	Sex	Age	Method	Vertigo	Deafness	Tinnitus	Result with Histamine	Result with Nicotinic Acid
1. M. P.	♀	37	Slow	Abolished by treatment	N. C.	N. C.	Improved (maintenance with nicotinic acid)	Improvement maintained
2. L. F.	♀	47	Slow	Abolished by treatment	N. C.	N. C.	Improved (maintenance with nicotinic acid)	Improvement maintained
3. A. S.	♂	35	Slow	Relapsed during treatment	N. C.	N. C.	N. C.	Recovered
4. H. S.	♀	62	Slow	Relapsed during treatment	N. C.	N. C.	N. C.	Recovered
5. V. A.	♂	40	Slow	Relapsed during treatment	N. C.	N. C.	N. C.	Recovered
6. L. R.	♀	44	Slow	Worse	Worse	Worse	Worse	Recovered
7. I. M.	♀	60	Slow	Worse	N. C.	N. C.	Worse	Recovered
8. W. C.	♂	27	Slow	Worse after preliminary improvement	Worse	Worse	Worse	Lost
9. J. C.	♂	39	Slow	Worse after preliminary improvement	Worse	N. C.	Worse	Recovered
10. A. E. B.	♂	37	Slow	Worse after preliminary improvement	N. C.	N. C.	Worse	Recovered; relapsed; lost
11. E. S.	♀	35	Slow	Worse after preliminary improvement	Worse	Worse	Worse	Recovered
12. M. I. P.	♀	32	Rapid	Worse after preliminary improvement	N. C.	N. C.	Worse	Recovered; relapsed; recovered
13. B. L. S.	♂	61	Rapid	Worse	N. C.	N. C.	Worse	Recovered
14. E. H. A.	♂	26	Rapid	Worse	Worse	Worse	Worse	Recovered [3]
15. V. K.	♀	63	Rapid	Worse	N. C.	N. C.	Worse	Too early [3]

Method: Slow, author's; rapid, Horton's. N. C., no change.

In addition, as control and as further evidence of the effectiveness of nicotinic acid in the treatment of this group, it may be mentioned that, since the original report in which the results of this method in 17 cases were given,[2] a further 79 cases have been seen and treated on the same lines. A detailed report on results will be made shortly. Here it must be sufficient to say that they have been as satisfactory as in the case of the original 17 and have served amply to confirm the previous findings.

COMMENT

Referring only to that group of cases which has been called vasoconstrictor, it is apparent that histamine produces in many cases immediately beneficial results, especially in the treatment of the acute attack, and this is explainable by its vasodilator action. It would seem, however, that in the long run the results are not so satisfactory. This also is understandable. Repeated administration of the drug appears to induce in the body an immunity to its action, perhaps by encouraging an increased production of histamine esterase, so that ultimately histamine loses its dilator effect. This is the rationale of desensitization in the sensitive group. If, and this is surmise, histamine is in part responsible for the normal balance of vasodilatation-vasoconstriction; if, as may be the case, excess of histamine or a histamine-like substance is the cause of the vasodilator effects seen in allergic subjects, then it stands to reason that neutralization of the vasodilator effect of histamine by increasing resistance to it, while perfectly rational in those cases in which vasodilatation is excessive, is quite irrational in that large majority of patients who are the victims of a primary vasoconstrictor mechanism. In them the normal compensatory process of vasodilatation is already diminished or absent, and the exhibition of histamine, once its initial vasodilator effect has passed, will only serve to diminish further an already inadequate process. Indeed, it has been observed in several instances that the response to a vasodilator (nicotinic acid) is slower and for a time less satisfactory than usual in vasoconstrictor cases which have been previously treated with histamine. They become resistant and require higher dosage.

This objection, of producing resistance to the drug, does not apply to nicotinic acid. The body does not appear to acquire an immunity to the vasodilator action of this substance. Nor, since nicotinic acid is a naturally occurring substance, a vitamin, would acquisition of immunity be expected. In practice it has been found that this substance can be given over long periods of time with steady improvement, and often very rapid improvement, as regards diminution in severity of attacks, and with ultimate cessation of them.[2] Indeed, the results are sometimes little short of miraculous. Nicotinic acid may not be the final answer in the treatment of this group, but it is by far the best that I have found as yet.

SUMMARY

It seems not unjust to conclude from the evidence given that histamine is not suitable for universal application in cases of Ménière's syndrome. It is suitable for selected cases only, and only by assigning individual cases to their correct group can effective treatment be assured. It is on a par with typing pneumonia cases for serum treatment. Confusion has crept in—my mail is ample evidence of it and the precipitating cause for this communication—because histamine has two effects, an immediate and a remote, and the two have not been distinguished. The immediate effect is vasodilator, in

3. Since this paper was written, patient 15 has gone steadily ahead on nicotinic acid therapy, needing rather large doses, and has now been free from attacks for three months. Patient 14, on the other hand, has relapsed after three months of freedom, perhaps as a result of the excessive doses which he as a doctor gave himself. This effect has been seen on other occasions. He was, unfortunately, impatient of relief and, rather than try the effect of reduction, elected to have an eighth nerve section.

consequence of which it often gives immediate and sometimes dramatic relief from a vasoconstrictor attack, though no more immediate or dramatic than other peripheral vasodilators. Its remote effect, by inducing a resistance to its action in the body in the same way in which a vaccine produces a resistance to the effects of a micro-organism, is nil or actually even vasoconstrictor. For this reason its repeated administration, while exceedingly effective in the vasodilator group as a desensitizing agent, in vasoconstrictor cases not only fails, after the initial doses, to produce the desired effect but sometimes even makes matters worse. Histamine will not relieve all, or even most, cases of Ménière's syndrome. Preliminary accurate grouping is essential to success.

ILLUSTRATIVE CASES

The following are three illustrative cases:

CASE 12.—*An instance in which histamine failed and nicotinic acid succeeded.*

A woman aged 32 had suffered from Ménière attacks of increasing frequency and severity off and on over a period of eleven years. She had tried all the recognized methods of treatment and some others, when she heard of histamine. She was treated with this substance at the Mayo Clinic, therefore correctly and adequately according to its approved method, with coincident improvement but with relapse following immediately on cessation of intensive treatment. Nevertheless she continued conscientiously with the maintenance regimen as advised, which however did not improve matters. When seen in April 1941 she was having three to four minor attacks daily and two or three severe attacks every week. She was almost completely incapacitated. Vigorous treatment with nicotinic acid resulted in decided improvement within a week, and she was free from dizziness of any sort for three months (August 1941). Though still not entirely herself again, a letter said that she was more active than she had been "for a very long time" and was improving. Dosage was consequently decreased, and in early September she wrote to say that she was experiencing another spell of attacks. Nicotinic acid intravenously stopped them at once, and on continued oral dosage she has been free for six weeks (October 1941).

CASE 11.—*An example of mistaken grouping: Histamine administered in a vasoconstrictor case with marked deterioration.*

A woman aged 35, already severely deafened, had suffered from dizzy spells of increasing frequency for eight and one-half years. When seen (in February 1940) she was having attacks almost daily. An intradermal histamine test was mistakenly adjudged positive and she was started on a course of desensitization. There was the usual immediate improvement while the drug acted as a vasodilator. After three weeks, however, attacks started again and became increasingly severe. Histamine was stopped and nicotinic acid substituted, with immediate improvement. After one month of intensive treatment she ceased to have any severe attacks and after a further two weeks was relieved of attacks of any sort, though still occasionally noticing a mild unsteadiness. Later she became pregnant for the first time after eleven years of married life without contraceptives, and her condition improved still more, presumably as a result of further vasodilatation. Administration of nicotinic acid was maintained throughout pregnancy. Except for a few minor attacks in the last two months the pregnancy was uneventful, and except for a month immediately after the birth of the child when she was having no treatment and had several (six to eight) minor attacks she has had no further trouble. Dosage of nicotinic acid is now being gradually diminished without, so far, further attacks (October 1941, six months after delivery).

CASE 14.—*A case in which histamine was used despite a negative intradermal test.*

This case is particularly instructive. A newly qualified doctor aged 26 had started in November 1940, nine months before being seen, to have prostrating attacks of dizziness which were diagnosed by himself correctly as Ménière attacks. They occurred in batches of three or four at intervals, at first monthly and then becoming more frequent. He tried, under advice, several accepted methods of treatment without effect. Then he performed on himself a histamine cutaneous test, which he correctly adjudged negative. Nevertheless, because he had read of the use of histamine for this condition and was impressed thereby, he decided to try histamine. This he did, first on his own account according to the method of administering it which I have adopted, later under supervision and strictly according to directions received from the Mayo Clinic. It produced no noticeable improvement. On one occasion during an acute attack in the hospital he was given histamine intravenously, but the attack did not cease until eight hours later. The second day it was given again, and the third, when it was followed in half an hour by an attack. It was persisted with and his attacks gradually increased in severity and frequency. Eventually he was persuaded to discard histamine and take to nicotinic acid, a change which resulted in immediate though slow improvement. Attacks became less severe and less frequent and have now ceased, though not for a period long enough to say that the result is permanent. Improvement was much slower than usual, which may have been because of the long period of treatment with histamine which preceded the change, an effect which has been observed in other cases.

123 East Sixty-First Street.

CAUSTIC EFFECT OF SODIUM SULFATHIAZOLE SOLUTION ON NASAL MUCOUS MEMBRANES

RESULTS OF ANIMAL STUDIES

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LOS ANGELES

It has long been the hope of rhinologists to find a medicament which, when applied in the nose and sinuses, would be bactericidal or at least bacteriostatic to pathogenic organisms yet spare the delicate ciliated membranes. Turnbull's[1] favorable recommendation of a nasal spray of 5 per cent sodium sulfathiazole no doubt raised such hopes. It has been difficult at large for specialists in otolaryngology to accept this recommendation. The complexity of chronic sinusitis is known too well to expect an eradication of infection, degenerative pathologic changes and the constitutional factors involved by the use of one medicament. Chronic sinusitis is not a specific disease, and success cannot be expected when it is so treated. Fletcher[2] has reported on the caustic action of sodium sulfathiazole in the maxillary sinus in 1 case.

The present report describes the effect of solutions of sodium sulfathiazole in 5 and 30 per cent concentrations when applied to the nasal mucous membranes of rabbits.

METHOD OF STUDY

Approximately 1 cc. of 5 per cent aqueous solution of sodium sulfathiazole was instilled into both nostrils of each rabbit three times daily. At intervals of two days 1 animal was killed until at the end of ten days

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Prof. Benton N. Colver of the College of Medical Evangelists gave suggestions, and Dr. Roland H. Osborne, pathologist of the White Memorial Hospital, assisted and cooperated in the preparation of the slides and interpretation of the pathologic findings.

1. Turnbull, F. M.: Intranasal Therapy with Sodium Salt of Sulfathiazole in Chronic Sinusitis, J. A. M. A. **116**: 1899 (April 26) 1941.
2. Fletcher, Russell: Sodium Sulfathiazole: Its Caustic Action, California & West. Med. **55**: 94 (Aug.) 1941.

5 animals had been killed. A sixth rabbit was allowed an additional seven days of recovery without further medication before it was studied. An untreated rabbit was used as a control. Death was accomplished by injecting air into the large vein of the ear. Local effects of the drug in powder form could not be determined, since its use in this form was found to be impracticable; a saturated solution of sodium sulfathiazole which represents a 30 per cent concentration of the drug was used instead. One additional rabbit was used for this experiment.

The heads of the animals were fixed in solution of formaldehyde, frozen with solidified carbon dioxide and cut in coronal serial sections about 3 mm. thick. The next step was to decalcify the identical sections of each rabbit, after which microscopic sections were made, mounted and stained.

FINDINGS

The first slide after two days' instillation showed obvious changes. The mucous blanket was thickened, the cilia were indistinct and the columnar and basal cells showed some vacuolization. The blood vessels in the submucosa were dilated. Slides of the fourth, sixth, eighth and tenth days showed progressive destruction; the mucous blanket became more irregular with breaks in continuity. The ciliary layer after the fourth day was entirely indistinguishable, as were the walls of the columnar and basal cells. The basal nuclear layer became progressively thicker, in some places four to five cells in thickness, and these cell walls were not distinct. There was some infiltration of small mononuclear cells and lymphocytes in the submucosa.

The turbinates showed a progressive displacement of normal epithelium by a transitional type of epithelium several times the thickness of the normal cells.

The mucous membrane from the animal, which was allowed seven days for recuperation after ten days' instillation, showed remarkably little recovery at the end of this time. The mucous blanket was still clumped, and no ciliary or columnary layers were yet distinguishable. The basal cells were observed one to two cells in thickness and showed fused nuclei. Engorgement of the submucosa still existed.

The experiment in which the saturated solution of sodium sulfathiazole was used resulted in a more complete destruction of the membrane with occasional areas of ulceration. Other areas showed flattening out of the surface layer of epithelium six to seven cells in thickness, an apparent metaplasia to the stratified squamous type. This metaplasia as observed was interpreted as a protective reaction.

COMMENT

The studies we have presented would seem to indicate that a 5 per cent solution of sulfathiazole sodium sesquihydrate is injurious to the nasal mucous membrane of rabbits. The cilia and the superficial layers of columnar cells are to a large extent destroyed, and even after one week recovery does not take place.

Hydrogen ion concentration determinations revealed that both the 5 and 30 per cent solutions had a p_H of approximately 10. This is in accordance with Fletcher's findings and also the statement of a commercial house distributing the product. It is possible that the high degree of alkalinity of the solution may be a factor in causing the mucosal damage noted in these experiments. This possibility is especially interesting in view of the recent findings of Fabricant [3] that the normal p_H of human nasal secretions is in the acid range.

Literature advertising the use of 5 per cent sodium sulfathiazole states that this solution is isotonic, which may be somewhat misleading to those interpreting the term isotonic as meaning nonirritant. In the future, soluble combinations of the sulfonamides without caustic properties may be produced: such solutions might prove useful.

CONCLUSIONS

1. Solutions of sodium sulfathiazole exert an early and severe destructive effect on the nasal mucosa of rabbits. This is true when the 5 per cent solution has been used as a nasal instillation.

2. After one week's rest from instillations there was little recovery from this destructive process.

3. Nonirritant chemical combinations of the sulfonamides may be possible and prove useful in the future.

1930 Wilshire Boulevard.

DEATH DURING SULFATHIAZOLE THERAPY

PATHOLOGIC AND CLINICAL OBSERVATIONS ON FOUR CASES WITH AUTOPSIES

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With the extensive therapeutic use of sulfathiazole, reports of untoward reactions have appeared in the literature. Many of these have been of a transient nature while others have been more serious and have terminated in death. Cases studied at autopsy have not been many and postmortem observations have been few. Therefore it seems timely to report 4 fatal cases in which sulfathiazole appears to have played an important role and in which lesions attributable probably to the action of the drug were found in various organs. Furthermore, certain definite information has been gleaned whereby the toxic action of this valuable drug may be minimized and fatalities from its indiscriminate use averted.

From an experimental point of view, the toxicity of sulfathiazole and its pathologic effects have been studied by Rake, van Dyke, Corwin and their associates,[1] by Long and his associates [2] and by others.[3] These observers found that in acute toxicity experiments on mice sulfathiazole was less toxic than sulfapyridine but

3. Fabricant, N. D.: Significant of the p_H of Nasal Secretions in Situ, Arch. Otolaryng. **34**: 297 (Aug.) 1941.

From the Division of Pathology, Department of Laboratories, the Jewish Hospital.

1. Rake, Geoffrey; van Dyke, H. B., and Corwin, W. C.: Pathologic Changes Following Prolonged Administration of Sulfathiazole and Sulfapyridine, Am. J. M. Sc. **200**: 353-362 (Sept.) 1940. Van Dyke, H. B.; Green, R. O.; Rake, Geoffrey, and McKee, Clara M.: Observations on the Toxicology of Sulfathiazole and Sulfapyridine, Proc. Soc. Exper. Biol. & Med. **42**: 410-416 (Nov.) 1939. Rake, Geoffrey; Van Dyke, H. B.; Corwin, W. C.; McKee, Clara M., and Green, R. O.: Pathological Changes Following Prolonged Administration of Sulfathiazole and Sulfapyridine, J. Bact. **39**: 45-46 (Jan.) 1940.

2. Long, P. H.: Thiazole Derivatives of Sulfanilamide; Sulfathiazole and Sulfamethyl Thiazole, J. A. M. A. **114**: 870-871 (March 9) 1940. Long, P. H.; Haviland, J. W., and Edwards, L. B.: Acute Toxicity, Absorption and Excretion of Sulfathiazole and Certain of Its Derivatives, Proc. Soc. Exper. Biol. & Med. **43**: 328-332 (Feb.) 1940.

3. Gross, Paul; Cooper, F. B., and Scott, R. E.: Urolithiasis Medicamentosa, Urol. & Cut. Rev. **44**: 205-209 (April) 1940. Lehr, David; Antopol, William; Churg, Jacob, and Sprinz, Helmuth: Acute Toxicity of Sodium Salts of Sulfapyridine, Sulfathiazole and Sulfamethylthiazole, Proc. Soc. Exper. Biol. & Med. **45**: 15-20 (Oct.) 1940: Lehr, David; Antopol, William, and Churg, Jacob: Massive "Acute" Precipitation of Free Sulfathiazole in the Urinary Tract, Science **92**: 434-435 (Nov. 8) 1940.

that in chronic toxicity the reverse was the rule. Lesions were limited chiefly to atrophy of the spleen with changes in the malpighian bodies and to the presence of concretions in the renal tubules, pelves and urinary bladder. In 1 mouse, focal necrosis of the liver was reported. In rats and monkeys sulfathiazole was found to be less toxic than sulfapyridine, and the lesions produced were slight and chiefly in the kidneys. Evidence of renal damage in 1 monkey included the presence of casts in the urine, ureteral accretions, hydronephrosis and "signs of primary renal injury."

The experiments of Gross, Cooper and Scott [3] on rats showed the incidence of urolithiasis caused by sulfathiazole to be less than that caused by sulfapyridine. When associated with secondary infection and pyelonephritis, it occasionally caused death. They also showed that the sulfathiazole uroliths, like those caused by sulfapyridine, were liable to spontaneous solution and disappearance. The term "urolithiasis medicamentosa" was suggested by them for the condition in which administration of drugs was followed by their deposition in the free or conjugated state as concretions in the kidneys and urinary passages.

In man the toxic effects of sulfapyridine and sulfathiazole on the kidneys are well known. Transient renal manifestations such as nitrogen retention, renal colic, hematuria, oliguria and the presence of sulfathiazole crystals in the urine have been reported by many writers.[4] Pepper and Horack [5] reported a case of bronchopneumonia in which more than transient renal complications were observed following the administration of sulfathiazole. At autopsy concretions were found obstructing the renal tubules, as well as in the pelves and bladder. Microscopically, there were also small focal areas of subacute and healed pyelonephritis with tubular nephrosis, round cell infiltration and colloid and hyaline casts in the adjacent tubules. Loewenberg, Sloane and Chodoff [6] reported a case of pneumococcemia treated with sulfathiazole in which autopsy showed concretions in the kidneys, ureters and bladder but in which there were no clinical signs of renal damage. Cutts, Burgess and Chafee [7] in a study of the therapeutic results with sulfathiazole and sulfapyridine in two comparable series of 30 patients reported a mortality rate of 10 per cent in each group. The 3 patients in the sulfathiazole group who died had nitrogen retention. In 1 case hematuria developed and blood sulfathiazole concentrations were 10.1 mg. per hundred cubic centimeters free and 14 mg. total. In the other 2 cases the urinary output diminished greatly, 1 patient becoming completely anuric. In the case presenting total anuria, the renal lesions were described as follows:

> The glomeruli are everywhere intact. There is extensive fatty metamorphosis of the convoluted tubular epithelium. Here and there, in an isolated tubule, there is necrosis of the epithelium, sometimes associated with an infiltration by polymorphonuclear cells, lymphocytes and large mononuclear cells. The cellular infiltration occurs both within the tubular lumen and in the surrounding interstitial tissue. The collecting tubules are frequently filled with hyaline casts, occasionally with polymorphonuclear leukocytes, and others are packed with desquamated epithelial cells. There is marked lymphocytic infiltration of the calyx and hyperplasia of the lining epithelium. The epithelium of the tubules at the junction of the cortex and pyramids is frequently packed with granules and aggregates of yellow pigment.

These authors, commenting on the possible influence of sulfathiazole in producing renal damage, suggested that the renal shutdown might have been due to overwhelming infection producing toxic renal damage rather than from direct action of the drug. Nevertheless, they stated that renal function should be watched closely until more was learned about the effects of sulfathiazole on the kidney.

TABLE 1.—*Determination of Sulfathiazole in the Tissues in Case 1*

	Free Sulfathiazole, Mg. per 100 Cc.	Total Sulfathiazole, Mg. per 100 Cc.	Acetylation, Percentage
Blood clot in renal pelvis			
Wet basis	80.0	....	....
Kidney			
Wet basis	23.9	39.1	38.8
Dry basis	127.0	208.0	38.8
Liver			
Wet basis	17.1	22.8	25.0
Dry basis	58.3	77.8	26.4

Goodman and Gilman [8] state that information concerning the toxic potentialities of sulfathiazole is incomplete and that its ultimate chemotherapeutic evaluation awaits the result of a sufficient number of reports regarding its pharmacologic, toxicologic and therapeutic indications. So far as the writers know, the literature contains but one record [9] of an autopsy in which death was assumed to be directly or indirectly attributable to the ingestion of sulfathiazole and in which lesions were found in organs other than the kidneys. The pertinent observations were "acute agranulocytosis with membranous and gangrenous pharyngitis and laryngitis; focal membranous tracheitis; focal hemorrhagic bronchopneumonia; edema of the pharynx and larynx, and distinctive cloudy swelling of the myocardium, liver and kidneys."

REPORT OF CASES

CASE 1.—*History.*—R. N., a white girl aged 15 years, was admitted to the Jewish Hospital May 14, 1941. She had had acne and irregular menses for the past eighteen months. Since February 1940 she had been treated with hypodermic injections of an estrogenic substance in the first half of her menstrual cycle and gonadotropic substance in the second half. For the acne she was given desiccated thyroid, acne vaccine, ferrous sulfate and heliotherapy until April 12, 1941 without relief. On that date she was given 25 tablets of sulfathiazole, each containing 7.5 grains (0.5 Gm.), to be taken one a day. The

4. Reinhold, J. G.; Flippin, H. F., and Schwartz, Leon: Observations of the Pharmacology and Toxicology of Sulfathiazole in Man, Am. J. M. Sc. **199:** 393-401 (March) 1940. Knoll, A. F., and Cooper, F. B.: Clinical Urolithiasis Medicamentosa Due to Sulfathiazole, Urol. & Cut. Rev. **44:** 292-294 (May) 1940. Arnett, J. H.: Hematuria from Sulfathiazole Therapy in Pneumonia, J. A. M. A. **115:** 362-363 (Aug. 3) 1940. Garvin, C. F.: Renal Complications Due to Sulfathiazole, ibid. **116:** 300-301 (Jan. 25) 1941. Flippin, H. F., Schwartz, Leon, and Rose, S. B.: The Comparative Effectiveness and Toxicity of Sulfathiazole and Sulfapyridine in Pneumococcic Pneumonia, Ann. Int. Med. **13:** 2038-2049 (May) 1940. Finland, Maxwell; Lowell, F. C., and Strauss, Elias: Some Aspects of the Chemotherapy of Pneumonia, New York State J. Med. **40:** 1115-1122 (July 15) 1940. Callomon, V. B., and Goodpastor, W. E.: Sulfathiazole in the Treatment of Pneumococcus Pneumonia, Ann. Int. Med. **14:** 1024-1031, 1940. Garvin, C. F.: Comparison of Sulfathiazole and Sulfapyridine in the Treatment of Pneumococcic Pneumonia, Arch. Int. Med. **66:** 1246-1251 (Dec.) 1940. Long, P. H., and Haviland, J. W.: The Problem of Pneumonia with Reference to Chemo- and Sero-Therapy, Ann. Int. Med. **14:** 1042-1049, (Dec.) 1940. Wagoner, S. C., and Hunting, W. F.: Sulfathiazole and Sulfapyridine in the Treatment of Pneumonia in Infancy and Childhood, J. A. M. A. **116:** 267-270 (Jan. 25) 1941.

5. Pepper, D. S., and Horack, H. M.: Crystalline Concretions in the Renal Tubules Following Sulfathiazole Therapy, Am. J. M. Sc. **199:** 674-679 (May) 1940.

6. Loewenberg, S. A.; Sloane, N. G., and Chodoff, Paul: Sulfathiazole Urinary Calculi in the Kidneys, Ureters and Bladder in the Absence of Marked Urinary Changes Following Sulfathiazole Therapy, J. A. M. A. **115:** 2069-2071 (Dec. 14) 1940.

7. Cutts, Morgan; Burgess, A. M., and Chafee, F. H.: The Treatment of Lobar Pneumonia with Sulfathiazole and Sulfapyridine, New England J. Med. **223:** 762-764 (Nov. 7) 1940.

8. Goodman, Louis and Gilman, Alfred: The Pharmacological Basis of Therapeutics, New York, Macmillan Company, 1941.

9. Hoyne, A. L., and Larimore, G. W.: Sulfathiazole as a Cause of Death, J. A. M. A. **117:** 1354 (Oct. 18) 1941.

ferrous sulfate was discontinued. Up to May 9 she had taken twenty-two tablets, at which time another series of twenty-five was begun. Three days later, shortly after taking a tablet, she began to complain of "grippy" generalized aches and pains, chilliness, headache and a burning sensation in her eyes. The next morning her temperature was 104 F. Her physician ordered continuance of the sulfathiazole, increasing the dose

Fig. 1 (case 1).—Drawing of urinary bladder with incrustations of sulfathiazole in lower right (left ureteral orifice). Mucosa is greatly edematous. Case 3 showed a similar picture.

to 15 grains (1 Gm.) every four hours. She took six doses on May 13 and in addition to her other symptoms became delirious. The next morning she vomited after three attempts to take the tablets. It was then noticed that she had not voided since 4:30 p. m. the previous day despite forcing of fruit juices and fluids. On the way to the hospital in the ambulance she had generalized clonic convulsions.

Physical Examination.—The temperature was 105 F., the pulse rate 110 a minute and the respiratory rate 22 a minute. She had a diffuse papulopustular acne on the face, neck and shoulders. There was slight generalized muscular rigidity with hyperreflexia. A diagnosis of anuria due to sulfathiazole was made and she was given intravenous fluids in an attempt to stimulate renal function. Catheterization yielded 10 cc. of turbid urine which contained innumerable sulfathiazole crystals, albumin, a moderate number of casts and a few white blood cells. The blood count showed a hemoglobin level of 74 per cent, 3,750,000 erythrocytes and 24,000 leukocytes, with 90 per cent neutrophils, 6 per cent lymphocytes, 2 per cent monocytes and 2 per cent eosinophils. Culture of the blood was sterile. Chemical examination of the blood showed 22 mg. of free sulfathiazole per hundred cubic centimeters, 42 mg. of urea nitrogen, a carbon dioxide combining power of 56.2 volumes per cent and 135 mg. of sugar. After twelve hours cystoscopy was performed in an attempt to lavage the urinary passages. A catheter was easily passed into the pelvis of the right kidney, but several attempts on the left side failed because of an apparent obstruction 1.2 cm. from the bladder. She died May 15 with a diagnosis of uremia due to sulfathiazole.

POSTMORTEM EXAMINATION

Gross Examination.—A complete postmortem examination was done. The body was well developed and well nourished. There was a papulopustular exanthem over the face and upper part of the chest.

Lungs: The external and cut surfaces were pink mottled with dark red-blue at the bases. They were crepitant and buoyant.

Liver: This organ weighed 1,280 Gm. The external and cut surfaces were red-brown mottled with yellow. The markings were indistinct.

Kidneys: The right kidney weighed 120 Gm. The capsule stripped easily and cleanly, revealing a smooth, shiny, red-brown bulging surface. In the cut surfaces it was difficult to recognize the corticomedullary distinction. The parenchyma bulged somewhat and was red-brown mottled with yellow. The cortex measured up to 6 mm. in thickness. The pelvis was not distended and contained about 1.5 cm. of clotted blood. On the surface of the clot, in places, there were pinpoint orange-yellow specks. A ureteral catheter extended into the pelvis of the kidney. Along the course of the ureter were small submucosal hemorrhagic areas. The ureteral orifices were patent. The left kidney weighed 150 Gm. and was similar to the right kidney except for small petechiae beneath the mucosa of the pelvis. The ureteral orifice was patent and about it was a zone, about 5 mm. in diameter, made up of tiny orange-yellow incrustations (fig. 1) which analysis proved to be sulfathiazole. The urinary bladder was contracted and empty. The mucous membrane was very pale and boggy in places.

Bone: The vertebral marrow was red. The bony trabeculae were delicate.

Spleen: Culture from the spleen was sterile.

Microscopic Examination.—The tissues from all the cases were fixed in solution of formaldehyde and stained with hematoxylin-eosin and also by the Gram-Weigert method for bacteria.

Lungs: Scattered throughout the preparation were roughly round foci varying in size, arranged loosely or compactly and made up of a central core of amorphous material in which there could be demonstrated fibrin and nuclear fragments. These were surrounded by varying but small numbers of polymorphonuclear neutrophils, some small and large mononuclear cells and an occasional eosinophil and plasma cell. Remains of alveolar walls and some epithelial cells also were seen (fig. 2). The

Fig. 2 (case 1).—Section of lungs (× 250); confluent foci of necrosis with slight peripheral reaction.

bronchioles were not distended. Their lumens contained pink staining granular material, epithelial cells, round cells and occasional white blood cells and red blood cells.

Liver: The capsule was thin. The arrangement of liver cells into cords and lobules was regular and distinct. In the connective tissue of the portal spaces there were some accumulations of mostly small and a few large mononuclear cells. The sinusoids were slightly distended and the Kupffer cells appeared

prominent. Scattered throughout the parenchyma and especially near the periphery of the lobules were various sized foci in which the cells had been destroyed. The remains of hepatic structures could be recognized in places by architectural remnants of cell membranes and connective tissue strands. The amorphous matrix of these areas contained nuclear fragments and débris. In some there were recognized a few small round

Fig. 3 (case 1).—Section of liver (× 250); focal necrosis; similar lesions found in cases 2 and 3.

cells and about them there were a variable number of polymorphonuclear neutrophils and small round cells (fig. 3).

Kidneys: In a preparation from the right kidney, within the cortex, the glomeruli were numerous and well distributed. They varied in size, some being larger and more cellular than usual. The capillary tufts were greatly distended. Bowman's capsule was thin. In some of the spaces there was granular pink staining amorphous material with an occasional red blood cell. The convoluted tubules were somewhat distorted. The lining cells were swollen to such a degree that the lumen was completely obliterated and the tubule appeared as a solid mass of structureless granular anuclear material (fig. 4). The protoplasm of the surviving cells was granular and no hyaline droplets were seen either in the cells or in the lumens. In other places the cells showed evidences of a mild to moderately severe granular change. The collecting tubules were often tortuous and widely dilated and contained blood as well as granular or blood casts. The epithelium of these structures showed no remarkable change. In this preparation one tubule contained a crystalline object similar to those to be described in case 2. The stroma was not increased in amount or density and occasionally beneath the capsule it contained a few round cells. The peripelvic connective tissue contained some collections of small and large mononuclear cells, plasma cells and occasional polymorphonuclears. Some extravasations of blood also were found. The blood vessels throughout the kidney were congested. The preparation from the left kidney showed a somewhat similar picture. The changes in the convoluted tubules were more severe and extensive. In the cortex was a small focus of necrosis similar to that described in the liver. A preparation stained for fat showed an abundance of droplets in the epithelium of the convoluted and collecting tubules. Double refractile lipoids were demonstrated in the epithelium of the convoluted tubules. The epithelium of the bladder was fairly well preserved and thrown into broad undulations. The tunica propria was extremely edematous and composed of delicate fibrous tissue, which was widely separated by clear spaces, owing to edema. Numerous small and large mononuclear cells were diffusely scattered throughout. The muscularis was also broadened but otherwise not remarkable.

Spleen: The follicles were numerous, well formed and evenly distributed. In some, a few swollen reticulum cells could be seen. The sinusoids were greatly distended and the walls were prominent. In some areas there were extravasations of blood. A few collections of large numbers of polymorphonuclear leukocytes were occasionally seen. In some areas, particularly at the periphery of the malpighian bodies, small foci of necrosis similar to those already described were found (fig. 5).

Lymph Nodes: The cytoarchitecture was obscured by edema. The follicles were swollen and their boundaries merged almost imperceptibly with the pulp. The latter was loosely arranged and contained large numbers of plump reticulum cells. The sinuses were prominent and the vessels were distended.

Bone Marrow: In the preparation from one of the lumbar vertebrae, the bony trabeculae showed no unusual changes. Between them there was an abundance of hemopoietic cells. Scattered throughout were small irregularly shaped foci containing masses of amorphous material in which remnants of erythrocytes and immature leukocytes could be distinguished. These resembled those found in the other organs.

Summary of Case 1.—A young girl after three weeks of treatment for acne with sulfathiazole had chills, fever and pyrexia. Despite the absence of positive physical manifestations to corroborate an infectious cause of the symptoms, she was given increased doses of the drug. This was followed by anuria and coma. High concentrations of sulfathiazole were found in the blood and

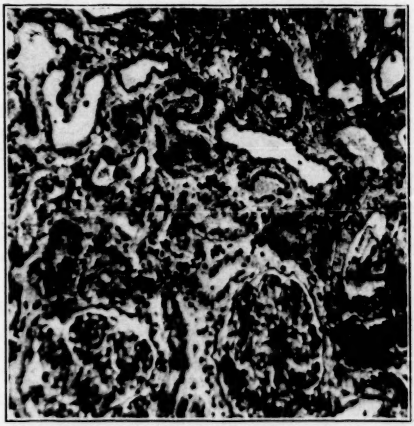

Fig. 4 (case 1).—Section of kidney (× 250); focal congestion in glomeruli; few erythrocytes in Bowman's space; degeneration of tubular epithelium; dilatation of some and occlusion of other tubules; similar lesions in case 2.

crystals of the drug in the urine. In spite of discontinuance of the drug, administration of fluids intravenously and ureteral catheterization, the patient died fifty hours after onset of the anuria.

The anatomic diagnosis was acne vulgaris; sulfathiazole urolithiasis; petechiae and hemorrhage in the pelvis and ureter; edema in the bladder; focal necroses in

the liver, spleen, lungs, kidney and bone marrow; nephrosis, and splenomegaly. The final impression was acne vulgaris with sulfathiazole intoxication showing visceral focal necroses and nephrosis.

CASE 2.—*History.*—H. K., a white man aged 60, was first admitted to the Jewish Hospital three weeks before the present illness for the repair of a hernia. His course was satisfactory

Fig. 5 (case 1).—Section of spleen (× 125); foci of necrosis; similar lesions in cases 2 and 3.

until the tenth postoperative day, at which time his temperature rose to 102 F., and a few rales were heard at the base of the left lung. He was given sulfathiazole and two days later his temperature was 99 F. He was discharged in good condition except for a few residual rales at the base of the left lung. A sulfathiazole determination on his blood before discharge showed a total concentration of 8.6 mg. per hundred cubic centimeters. At home the drug was continued. On August 8 he had a chill and a temperature of 105 F., and a generalized maculopapular erythematous rash developed. The sulfathiazole was continued because it was thought that the rise in temperature indicated an infection. His temperature remained high, and he gradually lapsed into coma, becoming incontinent of urine and feces, and was readmitted to the hospital the following day. Up to this time he had taken 660 grains (44 Gm.) of sulfathiazole.

Physical Examination.—On readmission the patient was semicomatose. His temperature was 104 F., the pulse rate 120, the respiratory rate 30 a minute and the blood pressure 130 mm. of mercury systolic and 70 diastolic. There was a diffuse generalized rash over the body. He was dehydrated and his respirations were labored. The conjunctivas showed congestion with slight chemosis. There were coarse rales at the base of the left lung. The clinical impression was sulfathiazole intoxication, sepsis and pneumonia. He was catheterized and 1 ounce (30 cc.) of cloudy urine containing many granular casts and a trace of albumin was obtained (the urine previously had been normal). Examination of the blood showed urea nitrogen of 51.2 mg. per hundred cubic centimeters and total sulfathiazole of 11.8 mg. He continued anuric and cystoscopy was done, yielding about ½ ounce (15 cc.) of bloody turbid urine. The bladder showed a "sandstorm" appearance which was interpreted as being due to either sulfathiazole crystals or mucofibrin. Despite attempts to stimulate renal function by means of hypertonic dextrose solution and intravenous sodium sulfate, the patient remained anuric. On August 15, decapsulation and right nephrotomy were done. He died two hours later. A blood sulfathiazole determination on August 13 was 13 mg. per hundred cubic centimeters total and 8 mg. free. On August 15, the day of his death, the free sulfathiazole was 8 mg. per hundred cubic centimeters.

POSTMORTEM EXAMINATION

Gross Examination.—A complete autopsy was performed.

The conjunctivas were smoky, injected and studded with pinpoint areas of red.

Lungs: The trachea and bronchi contained gray-green, tenacious, mucoid material. The lungs were crepitant and buoyant.

Liver: This organ weighed 1,830 Gm. The external and cut surfaces were pale brown, interspersed with small yellow areas. The markings were very prominent.

TABLE 2.—*Determinations of Sulfathiazole in the Tissues in Case 2*

	Free Sulfathiazole, Mg. per 100 Cc.	Total Sulfathiazole, Mg. per 100 Cc.	Acetylation, Percentage
Kidney			
Wet basis	3.4	4.75	27.2
Dry basis	12.8	17.8	28.0
Liver			
Wet basis	5.61	8.75	35.8
Dry basis	23.1	36.0	35.8

Kidneys: The right kidney weighed 190 Gm. and was decapsulated. The nephrotomy wound extended well into the pelvis of the kidney, which was filled with clotted blood. The mucosal lining of the ureter was discolored red-brown in places. The surface of the kidney was pale and showed many pinpoint areas of red. The sectioned surfaces were of similar color and streaked with red-brown. The cortex and medulla were difficult to differentiate. The pelvis was red-purple in places and contained some clotted blood. The left kidney weighed 160 Gm. The capsule stripped easily and revealed a smooth, pale, bulging, brown surface similar to that of the right kidney. The cut surfaces also resembled those of the right kidney. The ureteral

Fig. 6 (case 2).—Crystals in tubules of kidneys (× 1,000); also found in case 1.

orifices were dilated and the bladder mucosa about the orifices was swollen and edematous. The bladder was empty.

Spleen: This organ weighed 250 Gm. The external and cut surfaces were purple. On section the fibrous markings and follicles were distinct.

Bone: The bone marrow was bright red and abundant.

Microscopic Examination.—Liver: The capsule was slightly thickened. The arrangement of cells into cords and into lobules was normal. The central veins and sinusoids were

distended. The Kupffer cells were prominent. The connective tissue of the portal spaces contained dense collections of small and large mononuclear cells as well as an occasional polymorphonuclear neutrophil. Scattered throughout the parenchyma were small foci of necrosis which were similar to those described in the previous case (fig. 3).

Kidneys: In a preparation from the left kidney the capsule was slightly thickened. Beneath it were a few wedge-shaped

Fig. 7 (case 2).—Crystals in tubules of kidneys (× 700); also found in case 1.

areas composed of dense fibrous connective tissue surrounding hyalinized glomeruli and containing small and large round cells. Otherwise the glomeruli were numerous, evenly distributed and, for the most part, well preserved. The capillary tufts were congested. An occasional Bowman's capsule was thickened and the cells assumed a basophilic appearance. The convoluted tubules presented a variegated picture. The epithelial cells were swollen, the cytoplasm was coarsely granular and the nuclei were pyknotic, fragmented or absent. In some the swollen and degenerated epithelium obstructed the lumen completely. Many lumens harbored lavender or blue staining crystalline deposits which were oval or round. A few appeared homogeneous, others showed lines which radiated out from the center. Many of them appeared split into triangular segments, giving a spoke-wheel appearance (figs. 6 and 7). Occasionally they were embedded in casts of amorphous pink staining material. Many of the collecting tubules were noticeably distended. The epithelium in these was intact. In some places, particularly beneath the capsule, were foci of necrosis similar to those seen in the other organs. Occasional small and large round cells were seen scattered sparsely and diffusely in the stroma. The peripelvic connective tissue contained extravasated blood cells, some collections of round cells and occasional polymorphonuclear neutrophils. Examination of the right kidney showed a similar picture.

Adrenal Glands: In a preparation from one of the adrenal glands the capsule was delicate and contained distended capillaries. The arrangement of the cell layers was orderly. Scattered throughout were small focal areas of necrosis exactly like those seen in other organs. These were found particularly in the zona fasciculata and zona reticularis. The medullary tissue appeared to be uninvolved.

Bone Marrow: In a preparation from a lumbar vertebra, the chondro-osseous junction was narrow and even. The bony trabeculae were narrow and enclosed spaces which harbored a good number and variety of hemopoietic cells as well as megakaryocytes. Small focal areas of necrosis were scattered diffusely throughout. These were composed of granular cellular débris similar to those in case 1.

Summary of Case 2.—An elderly man who had been operated on for the repair of a hernia had a slight temperature and vague pulmonary signs on the tenth postoperative day, for which he was treated with sulfathiazole, the drug being continued after his discharge. Eight days later he had a chill, his temperature rose to 105 F. and a maculopapular rash appeared. He lapsed into coma and became rapidly anuric. Catheterization and renal decapsulation with pelvic drainage were resorted to in attempts to stimulate and reestablish kidney function, without avail. On discharge from the hospital his blood showed a total sulfathiazole level of 8.6 mg. per hundred cubic centimeters. Two days before death it was 8 mg. per hundred cubic centimeters in the free state.

The anatomic diagnosis was nephrosis; focal necroses in the liver, kidneys, adrenal glands and bone marrow; deposits in kidney tubules (sulfathiazole ?); splenomegaly; interstitial hepatitis; dermatitis; acute conjunctivitis. The final impression was sulfathiazole intoxication with visceral focal necroses and nephrosis.

CASE 3.—A white man aged 71 had had hypertension for ten years, albuminuria and pyuria intermittently for the past two years and some frequency and nocturia. Two weeks prior to admission he had an attack of chills and fever with pyuria and was given sulfathiazole. Nine days later his temperature was normal and examination of the urine showed a few clumps of leukocytes and a faint trace of albumin. His prostate gland was moderately enlarged. Intravenous pyelography revealed a picture suggestive of polycystic disease of the kidneys. Cystoscopy showed cystitis and trigonitis. Both ureteral orifices appeared normal. The middle lobe of the prostate gland was definitely enlarged and both lateral lobes were moderately enlarged. One day before admission he complained only of slight frequency of urination, but during the night chills and

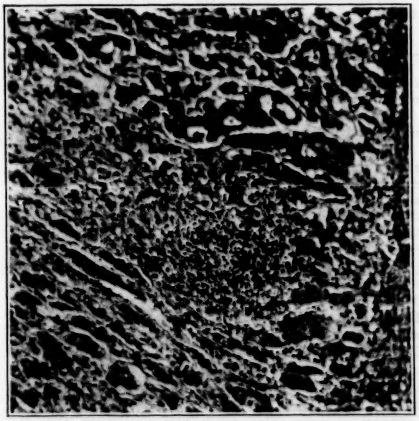

Fig. 8 (case 3).—Section of adrenal gland (slightly reduced from a photomicrograph with a magnification of 190 diameters); focal necrosis; also seen in case 2.

fever developed. On admission he appeared acutely ill. His temperature was 104.2 F., the pulse rate 96 and the respiratory rate 20 a minute. There were a few rales at the left base but no dulness or bronchial breathing. The clinical impression was polycystic disease of the kidneys with pyelonephritis. Sulfathiazole 15 grains (1 Gm.) every four hours was continued and 2,000 cc. of 5 per cent dextrose in saline solution was given parenterally. The next day his temperature was 104 F.

and he appeared lethargic. Catheterization yielded 4 ounces (120 cc.) of residual urine with a faint trace of albumin and a few leukocytes and erythrocytes. Escherichia coli was cultured from the urine. Culture of the blood was sterile. The blood urea nitrogen was 11.5 mg. per hundred cubic centimeters. Portable roentgenograms of the chest suggested bronchopneumonic infiltration throughout both lungs. On the second day he was comatose, but lumbar puncture the next day yielded no additional information. Sodium sulfathiazole was administered by venoclysis. Neurologic examination indicated definite cerebral involvement, which was interpreted as being due to the continued pyrexia. On the fourth hospital day the total blood sulfathiazole was 6.7 mg. per hundred cubic centimeters. He died approximately ninety-six hours after admission. During hospitalization he received a total of 240 Gm. of sulfathiazole.

POSTMORTEM EXAMINATION

Gross Examination.—The body was well developed and well nourished. The mucosa of the trachea and bronchi was covered with gray-green material. Beneath this exudate the mucosa was studded with slightly elevated, firm, gray patches that measured up to 2 mm. in diameter. These were especially numerous in the upper part of the trachea and in the right bronchus.

Lungs: The lungs showed no unusual features.

Liver: This organ weighed 1,715 Gm. The external and cut surfaces were pale brown and contained numerous pinpoint

TABLE 3.—*Determinations of Sulfathiazole in the Tissues in Case 3*

	Free Sulfathiazole, Mg. per 100 Cc.	Total Sulfathiazole, Mg. per 100 Cc.	Acetylation, Percentage
Spleen			
Wet basis	7.0	7.1	
Dry basis	28.2	28.6	1.4
Liver			
Wet basis	11.2	11.7	4.2
Dry basis	55.5	57.9	4.1
Kidney			
Wet basis	9.9	10.0	1.0
Dry basis	42.7	43.6	2.0

sized gray areas which were most prominent near the portal veins. These were scattered diffusely throughout the cut surface.

Adrenal Glands: Together they weighed 28 Gm. and showed no unusual features.

Kidneys: The right kidney weighed 580 Gm. The external surface contained numerous thin walled, smooth lined cysts, measuring up to 6 cm. in diameter, which were filled with clear amber fluid. They were irregularly scattered throughout. The capsule stripped with difficulty, portions of the cortex adhering to it, revealing a red-brown, finely and coarsely granular surface. The cortex and medulla were well demarcated. In places tiny yellow gray streaks were present. The left kidney weighed 520 Gm. and was similar to the right. A nodular black calculus 1.6 cm. in diameter filled one of the renal calices. Both pelves and ureters were not remarkable. The bladder was contracted and thick walled. The mucosa was boggy and in places was a dull to an angry red. Between the ureteral orifices was a firm orange-yellow crystalline mucosal incrustation 3 mm. in diameter, which gave the chemical reaction for sulfathiazole.

Prostate Gland: This organ was moderately firm and enlarged. On section it was pale brown, mottled with areas of gray.

Spleen: The spleen weighed 325 Gm. The external surface was slate blue, smooth and glistening. The cut surfaces were brick red and dry. The follicles and fibrous markings were distinct.

Microscopic Examination.—Heart: In a section of a branch of the coronary artery the walls of the vessel itself showed no unusual features. In the adventitia were focal areas of necrosis with infiltration by round cells and some polymorphonuclear leukocytes. The lesion did not appear to be of an inflammatory nature but rather one with a primary necrosis followed by cellular infiltration.

Trachea: The mucosa was replaced in places by slightly raised plaques which consisted chiefly of amorphous granular blue-staining débris containing some remnants of nuclei. This process involved only the mucosa and began and ended abruptly. Well preserved tracheal ciliated epithelium could be seen adjacent to the borders. In the submucosa just beneath these lesions there were infiltrations with round cells and polymorphonuclear leukocytes.

Lungs: In a preparation from the right lung, the pleura was slightly thicker than usual and contained numerous large mononuclear cells filled with black pigment granules. The alveoli were broad and empty, and many were confluent. The interalveolar septums were delicate and in places appeared disrupted. The mucosal lining of the bronchioles was well preserved and the lumens contained desquamated epithelial cells. The walls were thickened and infiltrated with polymorphonuclear leukocytes and small and large round cells. The walls of the larger arteries were slightly thicker than usual and their lumens narrow. A preparation from the left lung was similar except that in one small area the alveoli were filled with varying amounts and proportions of red blood cells, polymorphonuclear leukocytes and small and large mononuclear cells. A bronchiole in this region contained amorphous pink staining material, poorly preserved polymorphonuclear leukocytes, small and large mononuclear cells, desquamated epithelial cells and clumps of blue-staining cocci.

Liver: The architectural pattern was not altered. In some places the liver cells appeared to be swollen and the protoplasm was granular. The sinusoids and the central veins were distended and the Kupffer cells very distinct. Scattered throughout were small areas in which the liver cells showed various degrees of degeneration to complete destruction. Most of these foci were situated in or near the midzones of the lobules, occasionally being found adjacent to central veins or portal areas. They were composed of the remains of liver cells, nuclear fragments and débris, together with a variable degree of infiltration with small round cells and some polymorphonuclear neutrophils.

Spleen: The follicles were numerous and well distributed. Occasional germinal centers were seen which were composed of swollen, poorly preserved reticulum cells. The endothelial cells lining the sinuses were swollen and appeared prominent. The pulp was the seat of congestion and hemorrhage. Scattered throughout were varying sized foci of necrosis with little cellular reaction. The sinusoids were distended and contained numbers of polymorphonuclears and large mononuclear cells.

Adrenal Glands: In preparations from the adrenal glands there were foci of necrosis similar to those in the other organs (fig. 8). These involved the deeper portions of the zona fasciculata and the zona reticularis. None were found in the medulla.

Kidneys: In a preparation from the right kidney the capsule was thick and composed of dense bands of fibrous tissue containing an occasional round cell. In one place beneath the capsule there was a roughly wedge-shaped area which was made up of a dense fibrous tissue stroma with numerous small and large mononuclear cells and distended capillaries. In the deeper layers of the cortex were several round areas in which no tubules or glomeruli could be distinguished. These contained closely packed, poorly preserved polymorphonuclear leukocytes, nuclear débris, small and large round cells and some fragmented epithelial cells. In other places a few of the glomeruli were replaced by hyalinizing fibrous tissue. The glomeruli were congested. The epithelium of the convoluted tubules was well preserved and the lumens were empty. Scattered throughout were many cysts. The left kidney was similar to the right.

Urinary Bladder: The surface was corrugated. The membrana propria was edematous and contained an occasional focus of necrosis similar to foci described in other organs.

Prostate Gland: The acini varied much in size. Some were empty, others contained pink staining material and some leuko-

cytes. Still others were greatly dilated and lined by one or more layers of cylindric cells. About many of these the stroma was densely infiltrated with large numbers of polymorphonuclear leukocytes and a few round cells.

Mesenteric Lymph Node: Preparation showed diffuse edema. The follicles were difficult to identify. Some appeared compact

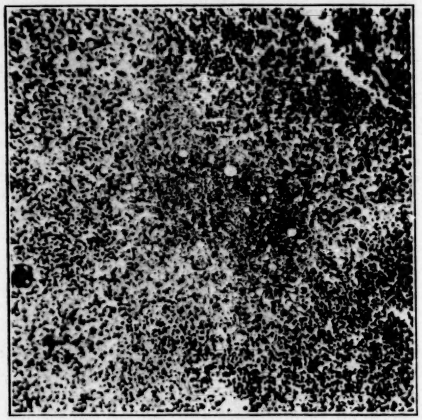

Fig. 9 (case 3).—Section of lymph nodes (× 185); focal necrosis; also found in cases 1 and 2.

and occasionally in their centers there were compressed masses of pink and purple staining necrotic débris. Scattered throughout the pulp were many areas of necrosis varying in size and shape, some being extensive and confluent. Poorly preserved leukocytes were scattered throughout. The reticulum cells were swollen and increased in number. An occasional foreign body giant cell could be recognized (fig. 9).

Bone Marrow: In preparations from a rib and a lumbar vertebra the bony trabeculae appeared as usual. The marrow was composed of the usual variety of cells and was abundant. However, scattered throughout were a number of irregularly shaped foci which contained red blood cells in various stages of destruction, together with amorphous débris and nuclear material (fig. 10).

Summary of Case 3.—An elderly man who had intermittent symptoms referable to the prostate gland for about two years two weeks before admission had an attack of chills, fever and pyuria and was treated with sulfathiazole. He apparently responded favorably to the treatment. Five days before admission the abnormal urinary findings were slight. His temperature was normal. However, the drug was continued and on the night before admission chills and fever occurred. In the hospital, the urinary changes were slight with the exception that Escherichia coli was cultured from the catheterized specimen. Roentgen examination suggested bronchopneumonia, and because of this diagnosis, together with a possible suppurative nephritis, full doses of sulfathiazole were given. The patient continued feverish and rapidly lapsed into coma. He died fifty hours after admission.

The anatomic diagnosis was focal necroses in the liver, kidneys, spleen, adrenal glands, lymph nodes, urinary bladder, trachea, coronary artery and bone marrow; sulfathiazole urolithiasis; edema in the bladder; abscesses and overgrowth of the prostate gland and kidneys; nephrosclerosis; polycystic kidneys; nephrolithiasis (left side); splenomegaly; necrotic tracheobronchitis; focal pneumonia (left side). The final impression was urinary infection, tracheobronchitis and terminal pneumonia with sulfathiazole intoxication.

CASE 4.—*History.*—A white woman aged 32 was admitted to the Jewish Hospital Jan. 27, 1942. In April 1940 she was treated for sinusitis with sulfanilamide. In September 1941 she complained of fatigue and vague symptoms which occurred intermittently. At this time her urine contained a faint trace of albumin and occasional red and white blood cells. Chemical examination of the blood revealed nonprotein nitrogen 50.7 mg. per hundred cubic centimeters and urea 23.5 mg. Six days prior to admission the patient noted a dry nonproductive cough and three days later malaise and pain low in the back. The night before admission she had a chill and the next morning her temperature was 102 F. Her physician prescribed 15 grains (1 Gm.) of sulfathiazole every three hours. By that evening she had taken 52.5 grains (3.4 Gm.) of the drug and her temperature had risen to 106 F. She now complained of severe headache and pain in the back and was referred to the hospital.

Physical Examination.—On admission her temperature was 105.4 F., pulse rate 134, respiratory rate 40 and blood pressure 104 systolic and 54 diastolic. She appeared acutely ill. There was a dry, nonproductive cough. The scleras were injected. The pharynx was red. Occasional fine rales were heard over the left side of the chest posteriorly. Sulfathiazole therapy was continued together with equal doses of sodium bicarbonate. During the night a generalized papular rash on an erythematous background appeared and the drug was discontinued. She had received a total of 45 grains (3 Gm.) of sulfathiazole in the hospital. The next morning it was noticed that she had not voided since admission. Catheterization yielded 60 cc. of turbid urine which contained albumin and a few casts and white blood cells. The blood count showed 25,000 white blood cells with 92 polymorphonuclear leukocytes. The patient com-

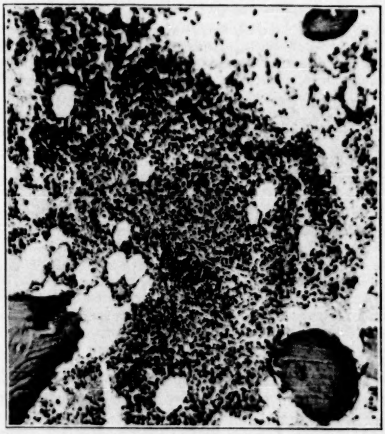

Fig. 10 (case 3).—Section of bone marrow (× 90); area of focal necrosis; also found in cases 1 and 2.

plained of nausea, and she vomited several times. Intravenous fluids were given but the temperature remained elevated and she died about twenty-six hours after admission. Laboratory data included a blood urea nitrogen determination of 47.6 mg. per hundred cubic centimeters, a total sulfathiazole concentration in the blood of 13.9 mg. per hundred cubic centimeters and a negative blood culture. The clinical impression was bronchopneumonia complicated by sulfathiazole intoxication.

POSTMORTEM EXAMINATION

Gross Examination.—The body was well developed and well nourished. There was a papulopustular rash over the face, ears, neck, upper part of the chest and back and the upper arms.

Lungs: The external and cut surfaces were pink mottled with black. They were crepitant and buoyant.

Liver: The liver weighed 1,680 Gm. The external and cut surfaces were pale red-brown. The lobular architecture was distinct, and scattered throughout were tiny yellow pinpoint areas.

Kidneys: The right kidney weighed 170 Gm. The capsule was thick and could be stripped easily but not cleanly, revealing a pale brown surface containing several linear depressed scars. In the cut surfaces cortex and medulla were easily differentiated and measured respectively up to 7 mm. and 1.6 cm. in the axis of a pyramid. The cortical markings were irregular and scattered throughout the parenchyma were tiny irregular yellow areas. The left kidney weighed 180 Gm. and was similar to the right.

Spleen: The spleen weighed 530 Gm. The external surface was slate blue, smooth and glistening; shining through it were several tiny yellow pinpoint specks. The cut surfaces were red-brown revealing similar yellow areas scattered throughout. The malpighian corpuscles were distinct.

TABLE 4.—*Determination of Sulfathiazole in the Tissues in Case 4*

	Free Sulfathiazole, Mg. per 100 Cc.	Total Sulfathiazole, Mg. per 100 Cc.	Acetylation, Percentage
Blood (wet basis)	8.2	11.4	28
Urine (wet basis)	23.9	45.4	48
Kidney (wet basis)	14.4	21.3	32
Liver (wet basis)	10.4	11.7	11
Spleen (wet basis)	9.1	11.2	19

Microscopic Examination.—Heart: Within the myocardium of the left atrium were several irregular areas composed of poorly preserved muscle fibers surrounded by partially broken down polymorphonuclear leukocytes, small and large round cells and occasional plasma cells and eosinophils. In other areas the myocardial fibers were swollen and their nuclei were pyknotic or absent and the cytoplasm was granular.

Lungs: In preparations from both lungs the walls of the bronchioles and bronchi were edematous and infiltrated with small and large round cells as well as occasional polymorphonuclear leukocytes.

Liver: Scattered throughout the preparation were small foci of necrosis similar to those described in the previous cases.

Adrenal Glands: In a preparation from one of the glands there was a large rounded area of necrosis within the cortex.

Kidneys: In a preparation from the right kidney the capsule was thicker than usual and composed of dense bands of fibrous tissue infiltrated with small and large round cells. Within the cortex the glomeruli were fairly well distributed, large and slightly decreased in number. The glomerular capillaries were not prominent. Some of the glomeruli were either wholly or partially replaced by hyalinizing fibrous tissue. The collecting tubules presented a varied appearance and were arranged in irregular fashion. The lumens of many contained pink staining fibrillar or granular pink staining material. Some contained polymorphonuclear leukocytes. In many of the convoluted tubules the cells appeared swollen and the cytoplasm was pink staining and granular. The nuclei were pyknotic and in many instances could not be made out. The interstitial tissue was increased in amount, edematous and extensively infiltrated with small and large round cells as well as polymorphonuclear leukocytes. Scattered throughout the cortex as well as the medulla were small foci composed of necrotic epithelial cells surrounded by polymorphonuclear neutrophils. The loops of Henle and collecting tubules were fairly well preserved but some contained amorphous pink staining material. The urothelium lining a portion of the pelvis was partly desquamated. The underlying tissue was loose, edematous and moderately infiltrated with small and large round cells. A preparation from the left kidney was similar.

Spleen: The follicles were numerous and well distributed. No germinal centers were seen. The endothelial cells lining the sinuses were prominent and the channels contained an increased number of polymorphonuclear leukocytes. These cells were distributed in increased numbers throughout the pulp. In places were varying sized foci of necrosis, some with moderate cellular reaction.

Skin: In a preparation from the skin of the back of the neck the surface was covered by a narrow band of keratinizing stratified squamous epithelium with blunt rete pegs. In places were masses of poorly preserved polymorphonuclear leukocytes (pus). In one area there was a small clear space between the corium and the epidermis which contained a small amount of pink staining homogeneous material and a few polymorphonuclear leukocytes. The corium was loose and edematous and the blood vessels were distended. Collars of round cells and polymorphonuclear leukocytes surrounded the capillaries, and similar cells were seen within the papillary layer of the dermis.

Summary of Case 4.—A woman who had received sulfanilamide about a year prior to her present illness apparently had had some renal disease, as evidenced by albuminuria, the presence of red and white blood cells in the urine and some nitrogen retention in the blood, six months prior to hospitalization. Her present illness began with signs suggestive of bronchopneumonia, for which she was treated with sulfathiazole. After having taken 52.5 grains (3.4 Gm.) of the drug her temperature rose from 102 to 106 F. She was then hospitalized. Sulfathiazole was continued and she took an additional 45 grains (3 Gm.) of the drug before it was noted that she had a generalized cutaneous rash. Because she had not voided since admission catheterization was performed, yielding 60 cc. of turbid urine containing albumin, casts and white blood cells. She died about nine hours later. Before death a blood sulfathiazole determination showed a total concentration of 13.9 mg. per hundred cubic centimeters.

The anatomic diagnosis was nephrosis; focal necroses in the kidneys, liver, spleen and adrenal gland; acute, focal myocarditis with necrosis; toxic dermatitis with focal necrosis; chronic pyelonephritis, and chronic bronchitis. The final impression was bronchitis and chronic pyelonephritis and death during sulfathiazole therapy.

COMMENT

Clinically and pathologically, the similarities in the 4 cases are striking. In each sulfathiazole was given uninterruptedly. During the therapy a sudden episode of chills and fever, sometimes associated with a rash, conjunctival injection or myalgia and arthralgia occurred. These symptoms were interpreted as being due to infection, and the drug was continued in the original or in increased amounts. However, the fever persisted, coma rapidly developed and in 2 cases anuria became a prominent feature.

Cultural and histologic search failed to demonstrate bacteria in the lesions in all the cases. In one, Escherichia coli communis was cultured from the urine during life, but autopsy revealed no evidence of infection in the focal necroses. In this case miliary abscesses were found microscopically in the prostate gland and kidneys, but these were not considered of sufficient severity and extent to explain death. The concomitant finding of widely scattered areas of focal necroses not characteristic of miliary foci of infection confirmed the impression of sulfathiazole intoxication. Terminal tracheobronchitis and a mild bronchopneumonia were also present.

The gross conditions found at necropsy in all cases, except for sulfathiazole urolithiasis, were not significant. The kidneys were pale and swollen. The cortical markings were indistinct and resembled those of nephrosis. The urinary bladders were contracted and the walls edematous. Gross obstructions were not found anywhere in the urinary tract. The spleens were moderately enlarged and firm and the cut surfaces were dry, presenting prominent malpighian corpuscles. Experimentally,[1] the spleen in mice has been described as atrophied. This was not found in the cases reported.

Microscopically, however, numerous areas of necrosis were scattered in most of the viscera, with the exception of the central nervous system and the gastrointestinal tract. These were miliary in size and varied greatly in their distribution and number, being most numerous in the liver in all parts of the hepatic lobules, the favorite situations being in the central and peripheral zones. The focal necroses in the spleen were most frequently found within or at the periphery of the malpighian corpuscles and were associated with hyperplastic changes in the reticulum. The lymph nodes showed a similar picture. In the adrenal glands in 3 cases the necrotic foci were found in the deeper portions of the zona fasciculata and zona reticularis. The medulla was not involved. The bone marrow contained necrotic foci in 3 of the 4 cases. These varied in number and size, and extensive areas of uninvolved hemopoietic tissue accounted for the absence of decided changes in the peripheral blood picture. Occasional foci were encountered in the trachea, lungs, wall of a coronary artery, skin, and urinary bladder. In the kidney, in addition to areas of focal necrosis, evidence of severe parenchymal damage was strong. The tubules were primarily affected and showed profound degenerative changes of a nephrotic character. The lumens of many were dilated and many contained cells, casts and blood, some to the degree of complete obstruction. In 2 cases there were found blue-staining crystalline structures, the exact nature of which was not determined. It is possible that they represent precipitated sulfathiazole in some unusual form, since the free or acetylated varieties dissolve in the ordinary processes of fixation and staining. This formation may have been a chemical or physical combination of the drug with calcium.

SUMMARY OF PHARMACOLOGIC OBSERVATIONS

Experimentally and clinically it has been found that sulfathiazole is rapidly absorbed from the intestinal tract and that its excretion by the kidneys is rapid if renal function is adequate. The extent of acetylation was found by Sadusk, Blake and Seymour[10] to vary usually from 0 to 30 per cent, the median being approximately 12 per cent. According to Lehr, Antopol and Churg,[3] the extreme rapidity of absorption and excretion of sulfathiazole supports the view that acute precipitation in the urinary tract is due chiefly to the high rate of elimination from the body. Strauss and his co-workers[11] determined that the concentration of sulfathiazole is higher in the kidney than in the blood and other organs. Concentration of the free drug in the liver is higher than the blood concentration and the degree of acetylation lower than the blood concentration.

In only the first case was the blood concentration of sulfathiazole extremely high (22 mg. per hundred cubic centimeters free). Unfortunately, the total sulfathiazole was not determined so that the degree of acetylation is not known. However, postmortem determinations revealed higher concentrations of the drug in the kidney than in the liver or blood. The proportion of acetylation in the kidney (38.8 per cent) was also higher than in the liver (25 per cent). The amount of sulfathiazole in the blood clot in the renal pelvis, which probably represented excreted material, was significantly much higher than that within the kidney itself. In the second case, the results were similar, albeit at a much lower level. The concentration and degree of acetylation were higher in the kidney than in the liver, spleen and blood. In the third case, however, the blood concentration and degree of acetylation were higher in the blood and the concentration of sulfathiazole was lowest in the kidney. In the fourth case the concentration and degree of acetylation were highest in the urine and next highest in the kidney. The total concentrations of sulfathiazole in the liver, spleen and blood were fairly similar, but the degree of acetylation in the blood, approaching that of the kidney, was higher than that of the spleen and liver. Because of the limited number of observations, no interpretation of these data is submitted at this time.

MODE OF TOXIC ACTION

Hypersensitivity to small doses of sulfathiazole has been reported by Stiles;[12] Finland, Peterson and Strauss[13] have emphasized that serious complications such as drug fevers, rashes and granulocytopenia occur with increasing frequency the longer drug therapy is maintained. In all the cases reported, chills and fever occurred during the course of treatment but only in 2 cases was there a rash unless the tracheal lesion in case 3 is interpreted as an enanthematous manifestation. Anuria rapidly developed in 3 cases. As far as is known, the lesion of focal necrosis has hitherto not been described except experimentally by Rake, van Dyke and Corwin.[1] In the course of toxicity determinations, they found areas of focal necrosis in the liver of 1 mouse.

According to Karsner,[14] toxic causes of focal necrosis include certain chemical poisons and the toxins of parasites or saprophytic organisms. He also states that Auer has shown that it is possible to concentrate reacting substances in anaphylaxis so as to produce necrosis. The bacterial nature of the necrotic lesions here apparently has been excluded. The decision of whether they are the result of direct toxic action of sulfathiazole or of an acquired sensitivity to prolonged ingestion of the drug cannot be made at this time. It is possible that a combination of these factors obtained in the production of the lesion.

CONCLUSION

Four cases are described in which death attributable to sulfathiazole was associated with necrotic visceral lesions. From these cases, certain clinical conclusions can be drawn:

1. The indiscriminate and uncontrolled use of sulfathiazole is not without danger.

2. Examination of the urine during the course of therapy is important, since crystals of the drug in the

10. Sadusk, J. F., Jr.; Blake, F. G., and Seymour, Anne: Observations on the Absorption, Excretion, Diffusion and Acetylation of Sulfathiazole in Man, Yale J. Biol. & Med. **12**: 681-696 (July) 1940.

11. Strauss, Elias; Lowell, F. C.; Taylor, F. H., and Finland, Maxwell: Observations on the Absorption, Excretion and Distribution of Sulfanilamide, Sulfapyridine, Sulfthiazole and Sulfamethylthiazole, Ann. Int. Med. **14**: 1360-1382 (Feb.) 1941.

12. Stiles, M. H.: Hypersensitivity to Small Doses of Sulfathiazole, Pennsylvania M. J. **44**: 823-824 (April) 1941.

13. Finland, Maxwell; Peterson, O. L., and Strauss, Elias: Some Uses and Abuses of Chemotherapy in Pneumonia, New England J. Med. **225**: 601-608 (Oct. 16) 1941.

14. Karsner, H. T.: Human Pathology, ed. 3, Philadelphia, J. B. Lippincott Company, 1932, p. 79.

urine and hematuria are danger signals. In their presence therapy need not be interrupted so long as the fluid intake and output are adequate. Sodium citrate, sodium bicarbonate or some other alkaline salt may be given.

3. A chill occurring during the administration of sulfathiazole and followed by sustained fever should be regarded as a danger signal, and sulfathiazole therapy should be discontinued at once.

4. Diminution and suppression of urinary output should be considered a contraindication to further administration of the drug.

5. Blood concentration of sulfathiazole over 10 mg. per hundred cubic centimeters is undesirable unless the aforementioned precautions are observed.

6. Sulfathiazole should be used only when definitely indicated and should not be continued longer than is absolutely necessary.

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ACTIVE IMMUNITY

PREVENTIONS AGAINST SMALLPOX, DIPHTHERIA, WHOOPING COUGH, TETANUS AND TYPHOID

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The ultimate objective of both general practitioner and public health official is the same. The former must as far as possible bring about perfect protection of his individual patient, while the latter is satisfied with such immunity as will protect the greatest possible number with the least possible effort.

Most active immunizing principles have been described, but few have stood the test of time. Perhaps the most successful have to do with smallpox, diphtheria, typhoid, tetanus and whooping cough. These will be described in detail.

A compilation of routine prophylactic procedures against infectious diseases may be found in the report of the Committee on Therapeutic Procedures for Acute Infectious Diseases and on Biologicals of the American Academy of Pediatrics and in the 1940 revised report of a Committee of the American Public Health Association on "The Control of Communicable Diseases" (reprint 1697, Public Health Reports, 1940).

SMALLPOX

Diagnostic Test.—There is no diagnostic test. The specific neutralizing titer of the blood serum can be determined, but this procedure is not practical.

Active Immunity.—This is accomplished when a susceptible individual is successfully vaccinated with smallpox vaccine.

(*a*) What is the Vaccinating Material? Smallpox vaccine is obtained from calves.

The seed virus is planted in the abdominal skin of a calf; when ripe, the vaccine is found in the semisolid mass at the base of the lesions and in the surrounding serum exudate.

The vaccinated animal is killed immediately before the vaccine is harvested, and a careful autopsy is done to discover any disease. Freshly harvested vaccine is not sterile. It may contain many types of organisms, but most of these are easily controlled by putting the virus in glycerin. Some firms even add a dye, such as brilliant green. Smallpox vaccine is thoroughly tested to insure that it is free from tetanus spores and other pathogens.

Vaccine is extremely sensitive to temperature changes, and it should not be kept in a warm room. It should be placed in the freezing compartment of a refrigerator or actually on ice at a temperature well below 40 F., the colder the better. When vaccine material is shipped, it should be packed in solidified carbon dioxide. It should never be used after the expiration date, which is stamped on the outside of each package. Vaccine is never sold in bulk but only in individual capillary tubes, which, once broken, must be used immediately or discarded. The potency of vaccine from various commercial houses may differ.

(*b*) Who Should Be Vaccinated? Any one who never has had the disease, the individual successfully vaccinated previously who has lost his immunity, and all those recently exposed to smallpox should be vaccinated. When a susceptible person has been exposed to smallpox, it is best to vaccinate him at once with vaccine obtained from different lots if possible in three or four places about an inch apart. This is done in the hope he will develop enough immune antibodies either to ward off an attack of the disease or to modify its character.

(*c*) How to Release the Virus from the Capillary Tube: Thrust the capillary tube through the middle of the narrow end of the rubber bulb. Cover the exposed end of the tube with sterile gauze and break it off below the vaccine level. Then bend and break the end in the bulb. When the finger tip is placed over the opening of the bulb and pressure exerted, the contents of the capillary tube are evacuated.

(*d*) Methods of Inoculation: The skin is first gently cleansed with soap and water, dried, wiped clean with some solution like acetone, alcohol or alcohol combined with ether, and the area allowed to dry. Do not rub the skin. The vaccinated area should never be over ⅛ inch in diameter and should not be directly exposed to sunlight for a few hours after vaccination.

There have been many methods of inoculation described in the past, scarification, linear incision, the drill method, intradermal, subcutaneous, by threading, and so on. The idea was merely to pierce the epidermis and to avoid drawing blood.

The U. S. Public Health Service recommends the multiple acupressure method (multiple pressure method). The left arm is grasped and the skin put on the stretch between the forefinger and the thumb of the left hand. A drop of vaccine material is placed on the skin, and a sharp pointed needle, placed tangential to the tightly stretched skin, is raised up and down quickly, the body of the needle always parallel to the arm, pressing down each time it reaches the taut skin. This makes a small prick in the epidermis. Ten to twenty pressures confined to an area ⅛ inch in diameter are enough to get a good take; thirty will usually result in a take even if the vaccine is less potent. All remaining vaccine should be wiped off at once with sterile gauze and the sleeve pulled down. Immediately after vaccination the area appears red. Within six hours all evidence of the punctures will have faded and there will

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Owing to lack of space, this article is abbreviated by omission of the literature to be studied. The complete article appears in the author's reprints.

be no evidence of bleeding. Shields and other dressings should never be used, since they retain moisture and create conditions favorable to secondary infection.

(*e*) Place of Inoculation: The area over the insertion of the deltoid of the left arm is the best place to vaccinate.

One must be cautious when vaccinating an eczematous patient. In nonepidemic periods it might be well to wait until skin lesions are healed. During epidemics the patient should be vaccinated despite the eczema.

(*f*) Course of Vaccination: The results of vaccination are a full take, no take, a vaccinoid or accelerated reaction and a reaction of immunity.

If the vaccinated person has no take whatever, the vaccine material has become inert and the procedure must be repeated. It does not indicate that the subject is immune but that the vaccine virus used is weak.

A primary vaccinia, or take, gradually passes through the stages of maculation, papulation, vesiculation and pustulation within three to nine days, with subsequent desiccation and scabbing, followed by healing of the lesion by the twenty-first day. The first reaction is a macule. This type of lesion progresses so quickly into the papular lesion as to be sometimes missed. The papule enlarges for three to five days. There may be subjective sensations of burning and itching. By five to seven days a gray pearl colored vesicle appears which soon becomes umbilicated. About the seventh or eighth day the vesicle has become pustular, averaging ½ to ¾ inch in diameter, surrounded by a red areola. The area about the lesion may itch intensely. The local glands are enlarged. Clinical symptoms now appear, such as headache, backache, general malaise, a fever and a leukocytosis, which may last three to four days.

About the eleventh or twelfth day, the pustule begins to dry and form a crust. The scab thus formed drops off somewhere between the twentieth and twenty-fifth day, leaving the exposed area red. This gradually changes to pink and then to a dead white appearance—all during the period of about six months to one year.

If a person has some but not sufficient antiviral immunity, he may develop an accelerated take or vaccinoid reaction which passes through the stages mentioned—maculation, papulation, vesiculation and pustulation, quickly, within four to seven days. Sometimes the lesion may not even get to the stage of pustulation. Occasionally the lesion may become hard, elevated and wine colored and subside slowly without going on to the stage of vesiculation.

Some persons successfully vaccinated may retain their immunity and, when revaccinated, will have what is termed a "reaction to immunity" or an immediate or accelerated reaction of local redness and induration. This may be nothing more than redness and induration or perhaps a glassy vesicle, coming on usually within twenty-four to forty-eight hours after vaccination. This indicates that the person cannot be revaccinated and probably will not get the disease. Sometimes vesicles may appear within twelve hours after vaccination in these immune persons.

The vaccine may be so potent and the patient so lacking in immunity and susceptible to the vaccine that a positive take with a varioloid condition is produced, with which one has all the symptoms and signs of mild smallpox. The lesions are typical if they go on to the stage of pustulation, but usually there is a tendency for these lesions to become hard vesicles and to be absorbed at this stage. They may, however, go on to the stage of pustulation. The symptoms will be the same as those of a mild smallpox infection. This reaction is rare.

(*g*) Dangers of Vaccination: The chief danger is infection, such as erysipelas, other coccoid infections and tetanus. Postvaccinal encephalitis occurs rarely. The vaccinated individual should be instructed not to touch the lesion, as virus may get on the finger tips and be spread by scratching. If the scab is disturbed, the underlying lesion may develop a weeping surface. The area should be covered with sterile gauze. If infection occurs, sulfonamide drugs are given internally. The latter drugs do not prevent a vaccination take.

(*h*) When to Vaccinate: It is best to vaccinate as soon after birth as possible, but not before the umbilical cord drops off. Few complications occur at this time; the procedure is well borne and the reactions are inconsequential. The lesion can be easily kept dry and cool and the chances for cross infection with tetanus germs and the like are minimal. To my knowledge, no cases of postvaccinal encephalitis have been described during infancy. If the child is not vaccinated in infancy he should be vaccinated at least before the age of 3 and during the cold weather, if possible. The Committee on Therapeutic Procedures for Acute Infectious Diseases and on Biologicals of the American Academy of Pediatrics recommends that the child should be vaccinated at any age during an epidemic, but routinely at any time between 3 to 12 months. All children should be routinely revaccinated at 6 and 12 years of age. Every one should be vaccinated, susceptible and previously successfully vaccinated persons alike, immediately after exposure.

(*i*) Results of Immunization: Vaccination is probably one of the most successful of active artificial immunization procedures, but, like all such procedures, it may fail to protect. There may be failures because the vaccine is old, because it has become attenuated by some physical factor, because it is actually impotent or because the vaccination has not been done properly. Occasional persons may even lose their immunity quickly.

(*j*) Duration of Protection: The duration of protection which follows a successful take is variable. Usually a good take will protect at least five to seven years. It may even protect for the whole lifetime of the individual. Since a certain percentage of vaccinated persons lose their immunity, it is best during the course of an epidemic to consider all persons as having lost their protection and to revaccinate all exposed persons despite previous successful vaccinations. The individual who has immunity will have a reaction of immunity and no discomfort other than a slight local induration which follows within twenty-four hours after vaccination, while the few who have lost their immunity may have an accelerated reaction or definite take.

DIPHTHERIA

Diagnostic Test.—The Schick test is one of the most accurate of all biologic tests but like other biologic tests is not an infallible measure of immunity. To perform it, inject 0.1 cc. of diluted diphtheria toxin intradermally (not subcutaneously) into the skin of the forearm. Some biologic manufacturers make up their material so that 0.2 cc. is required for the test. Before proceeding, one should read the literature which accompanies each package of toxin to determine what the dose should be. The diluent is usually physiologic solution of sodium chloride. If properly administered, a small,

white, raised wheal-like lesion will immediately appear at the site of injection.

From a public health point of view it is unnecessary to do Schick or control tests on young children before immunization; the tests will nearly all be positive anyway. In private practice, however, it may occasionally be desirable for some reason or other; it is thought best by some not to give another injection unless it is necessary.

Volk now believes that Schick testing as a routine procedure need not be encouraged because antitoxin levels change from time to time. He with Bunney now believe that, when a previously immunized child has been exposed to diphtheria and the status of immunity is unknown, the child should be reimmunized with a dose of alum precipitated toxoid. Volk, however, does not rule out the use of the Schick test occasionally to determine immunity.

The test should be read four or five days after injection. Pseudoinflammatory reactions which appear twelve to forty-eight hours after the injection can be ignored. An area of redness or brownness with desquamation 0.5 cm. or larger in diameter indicates that the test is positive. The size of the reaction is no absolute indication of the amount of antitoxin possessed by the tested individual. An infant may acquire some passive immunity from the mother. Hence he may be a negative reactor for six to eight months after birth. Such immunity is usually lost within the year after birth.

Older children and adults should have a Schick test before being immunized. Many individuals may be sensitized to the materials in which the diphtheria organisms grow and they will have an apparent persistently positive Schick test. A control test becomes necessary to detect such a condition.

To do this, heat the same Schick toxin solution used for the test to 70 to 80 C. (158 to 176 F.) for ten minutes and inject comparable amounts (0.1 or 0.2 cc., as the case may be) intradermally into the opposite forearm. The bilateral reactions should be comparable if the patient has become sensitized. If both sides respond, but the side getting the Schick material has a larger reaction, it is questionable whether the patient is sensitized or immunized.

One-tenth cc. of a 1:20 dilution of toxoid is sometimes used as the control in the Schick test instead of the heated toxin (Moloney reaction). Heated toxin, however, is a better control mixture for the Schick test.

There is only one way inferentially to determine susceptibility, i. e. by testing the blood serum for its antitoxin content. This procedure is too difficult and unpractical.

Active Immunity.—One cannot give all the credit for the recent drop in the diphtheria morbidity rate to active immunization, for a decline in morbidity and mortality rates has occurred in American cities where no programs of immunization have been in progress. Even the decrease in cities which have employed active immunization is much beyond that which might have been expected with any such program of protection. Despite these facts we know that animals can be protected by vaccination against diphtheria and the susceptible human being rendered Schick negative. We know that most persons acquire immunity as they grow older and if we can keep the majority of the childhood population immunized the disease will be controlled. (See U. S. P. H. S. opinion later.)

(*a*) Place of Inoculation: The injection is usually made in the deltoid or triceps area of the arm or in the back between the shoulder blades, but it could be made anywhere. All injections are given subcutaneously.

Diphtheria toxoid has also been injected intradermally. I have compared the differences in reactions between intradermal injections of alum precipitated and the plain fluid toxoids in children in an orphan home and in nurses at Cleveland City Hospital. There are local reactions about both injections, but they are definitely greater about the fluid toxoid. Intradermal immunization is not recommended because it is not always easy to do, and it has no decided advantage over the much easier subcutaneous method of injection.

(*b*) Immunization Materials: Three materials are prepared commercially to produce active immunity; they are toxin antitoxin, toxoid and alum precipitated toxoid.

The toxoids are very stable. Aging does not cause them to deteriorate much; freezing does not destroy them; even heat affects them but little. Unlike toxin antitoxin, they never revert and become toxic again.

The present tendency in private practice is to learn how to use one type of material for everybody.

All of these immunizing agents come in vials and before using the stopper is cleaned with alcohol or alcohol ether or acetone; the plunger of a syringe is withdrawn up to the 0.5 or 1 cc. mark, as the dose may be; the needle is thrust through the rubber stopper; the barrel is slowly plunged to the hilt, and the air is expelled into the vial. The fluid is sucked into the syringe to the proper marking desired. The vial is then drawn away from the needle and the syringe barrel is tapped lightly to get rid of air bubbles.

(NOTE.—This preliminary procedure is common for all preparations held in vials or bottles with rubber caps. Alum precipitated toxoid preparations must be shaken before use.)

1. Toxin antitoxin. This is toxin underneutralized by horse, goat or sheep antitoxin. It has been recommended for persons over 10 years of age.

This antigen is a clear fluid. Reject cloudy fluid. Injections are given subcutaneously in doses of 0.5 cc., 1 cc. and 1 cc. at two to four week intervals. The objections to its use are: (*a*) Immunity is produced too slowly, since a year may elapse before the Schick test will become reversed; (*b*) the individual injected may become sensitized to animal serums.

2. Diphtheria toxoid (plain toxoid, Ramon's Anatoxine). This is recommended for children under 10 years of age. It is a clear fluid. Reject cloudy fluid. It is injected subcutaneously in doses of 0.5 cc., 1 cc. and 1 cc. at intervals of at least two weeks. The tendency is to prolong the time interval between doses about one month so that a physician need not be concerned about a strict time interval. Serum sensitization will not occur after these injections.

Adults may be susceptible to the diphtheria bacillus protein. When either toxoid or alum precipitated toxoid is used, it may be advisable to inject 0.1 cc. of the toxoid material intradermally. This indicates the amount of hypersensitivity (Moloney reaction). My practice has been to inject 0.1-0.2 cc. subcutaneously and to consider this as part of the immunization procedure. The amount of reaction determines the amount injected subsequently.

3. Alum precipitated toxoid. This preparation is gradually supplanting all other diphtheria immunizing

agents. It is more slowly absorbed, more slowly excreted and effects immunization more promptly. It is a milky white substance. The Committee on Therapeutic Procedures for Acute Infectious Diseases and on Biologicals of the American Academy of Pediatrics recommends three doses, 0.5, 1 and 1 cc., to be given subcutaneously at intervals of two to four weeks, although the time interval between doses may be preferably longer, i. e. from two or more months.

To avoid reactions in nurses, doctors and other persons toxin antitoxin has been recommended. It is this very group, however, that occasionally has reactions following the injection of this biologic preparation. It is questionable whether these persons should be immunized thus and possibly sensitized to animal serums. They are the very ones who are continuously exposed to infectious diseases, which require therapeutic treatment with horse serum products, and it is most important not to sensitize them. I myself believe that alum precipitated toxoid will supplant the use of both toxoid and toxin antitoxin even for this group. For the past four years I have used it to immunize all of our nurses (City Hospital, Cleveland).

The number of injections is important from a practical point of view.

It has been demonstrated that the amount of antigen necessary varies with communities and is probably correlated with the prevalence of diphtheria bacillus infection.

The final conclusions of Volk and Bunney in their recent study for the A. P. H. A. was that the most effective immunizing procedure was two doses of alum precipitated toxoid; their second choice was three injections of fluid toxoid.

It is the opinion of clinicians that one dose of alum precipitated toxoid is not sufficient to immunize a person. It is also their opinion that, although two doses might immunize most persons, three doses would probably be best for more complete protection.

4. Reactions. Each of the three materials may cause reactions. Toxin antitoxin causes few or none in children and some in adults. Toxoid and the alum precipitated toxoid cause local as well as general reactions in both children and adults. The severity is relatively less in children. It is unusual in my experience not to have at least a slight local reaction, such as a faint pink lesion, deep red erythema, some deep induration, nodular formation or a brawny swelling of the arm around the area injected. Any one of these local reactions may be accompanied by all the signs of inflammation—local pain, heat and so on. There may be general reactions also, such as fever, headache, malaise or occasionally some prostration. Urticaria and local allergic responses have been described.

The toxoids always cause some local and often general reactions in an adult. The adult may have some immunity, and less of the toxoid product need be given. One can begin by injecting 0.1 cc. subcutaneously to determine the type of reaction to expect and then 0.2 cc. and 0.5 cc. at intervals of two to four weeks to two months apart. An additional 1 cc. is given a few months later if the reactions have not been too severe.

Within four or five hours after an injection of toxoid, a local reaction may be apparent. The reactions after toxin antitoxin, when present, are about the same as after toxoid. Within twelve to twenty-four hours any reaction is usually at its height and the fever, malaise, and so on are then most prominent. The localized reaction begins to recede within twenty-four hours, and by forty-eight hours, although the area may still be painful to touch or manipulation, the greater part of the inflammatory response has receded and the generalized reaction has disappeared. It may take a week, however, for the local induration to subside completely and to absorb. In fact, the antigen remains in the body long enough to act as an autostimulus. Occasionally a small nodule is formed at the site of injection, and it may be months before this is completely gone. Sometimes a sterile abscess will follow.

(*c*) Result of Immunization: The Subcommittee of Evaluation of Administrative Practices of the American Public Health Association does not feel that as a public health measure a test is necessary after the routine inoculation of children in infancy, although it may be desirable in private practice and under some other conditions of contact exposure. The private practitioner will want to do a Schick test within six months after immunization has been completed. (See opinion of Volk and Bunney stated subsequently.) The patient should be reimmunized if found to be positive.

(*d*) Age When Injected: It is preferable not to immunize before 9 months of age and not to inject routinely after 10 years of age without some good reason.

One should routinely immunize adults only if they belong to a group which will be definitely and intimately exposed to this infection, such as doctors, nurses or teachers. Persons in this group should never be immunized unless first tested and the Schick test found to be positive. Most adults, especially if living in an area of prevalent infection, immunize themselves by subclinical attacks and, by the time they reach adult life, they may have become negative reactors to the Schick test.

(*e*) Duration of Protection: Reports vary. Some say that protection lasts as short as five or six years and as long as ten years after immunization with toxin antitoxin and that about 70 per cent are immunized after three injections.

The toxoids have been introduced too recently to have afforded accurate long term statistics, but the trend is toward the sole use of alum precipitated toxoid.

Two doses of toxoid are said to be 20 to 30 per cent more effective than three of toxin antitoxin. It is stated that about 70 to 90 per cent of those vaccinated will be immunized as soon as two months after two doses of toxoid, but that one third will have lost their immunity within five years.

The alum precipitated toxoid introduced by Glenny and his co-workers and reported in this country in 1933 by Havens and Wells was carefully studied by Volk and Bunney. Volk demonstrated that after one injection there were some 83 to 86 per cent Schick test reversals, depending on the number of Lf alum precipitated units injected. It is believed that the increased antigenic efficiency of the alum precipitated toxoid is due to the fact that the molecules are held in the subcutaneous tissue for a long period of time and absorption is slow, as evidenced by the persistence of the nodular masses mentioned previously.

Bundesen, Fishbein and White state that at least 94.9 per cent were Schick negative two years after injection, although only 43.4 per cent of the persons immunized had more than ½ unit of antitoxin.

From a public health point of view a single dose of alum precipitated toxoid is preferred to two doses of toxoid or toxin antitoxin. It may be advisable to give another injection of the toxoid just before the child enters school. The reenforcing dose given at school age is recommended to be half the size of the initial dose. This is enough to provide the secondary antigenic stimulation. In private practice it is advisable to repeat the Schick test at 6 and 12 years of age or at the age coinciding with the age group getting clinical diphtheria in that particular community. The United States Public Health Service has directed my attention to the fact that the persistence of Schick negativity is due less to the original antigen than to previous and subsequent experience of an individual with the diphtheria bacillus. They call attention to the fact that one dose of alum precipitated toxoid is at present sufficient for 85 to 95 per cent in Alabama (where carrier prevalence is high), while two doses are necessary in Michigan, where the prevalence is low. In addition, children in Michigan need a stimulating dose at about school age.

(*f*) Place of Reinoculation: If reinoculation is necessary, one should give the vaccine at some place other than where injections were made previously. I have noticed that too many injections of active immune products at any one point cause severe local reactions.

Exposees.—Exposed persons may be passively immunized with 1,000 units of antitoxin. This passive immunity lasts from ten days to several weeks. It is unnecessary to inject exposees unless the physician practices in an inaccessible place. Should a person get diphtheria, the children in the family should be observed closely. Many of them will not get the disease anyway and do not need passive protection; if they do get the disease, it is seen early enough and can be aborted quickly by the use of antitoxin. Some advise passive protection of children under 3 years of age on the belief that adequate examination of infants is difficult. If one wishes to immunize a child actively after injecting antitoxin, some time should elapse before the injections are given. There are reports, however, where simultaneous administration of prophylactic antitoxin and toxoid were followed by Schick negativity.

If the patient contracts diphtheria during the course of active immunization, he should be treated with antitoxin.

As mentioned previously, in country practice one may wish to give the exposee 1,000 or 2,000 units of antitoxin intramuscularly. Never inject the antitoxin subcutaneously; the area about the injection may later become painfully indurated. In some instances the area around the site of injection may become brawny and indurated and a modified Arthus phenomenon observed with local sloughing of the tissues.

Multiple Vaccination.—Diphtheria toxoid or alum precipitated toxoid has been combined with (*a*) alum precipitated whooping cough bacilli or (*b*) tetanus toxoid or alum precipitated tetanus toxoid. Neither of these combinations is said to interfere with the production of diphtheria immunity.

One commercial firm combines an alum precipitated vaccine (Hemophilus pertussis bacillus) containing 40 billion killed organisms per cubic centimeter with alum precipitated diphtheria toxoid standardized at 40 Lf units per cubic centimeter and advises the injection of three doses of this combined vaccine subcutaneously in amounts of 0.2, 0.3 and 0.5 cc.

Another firm has standardized this mixed vaccine at 10 billion organisms per cubic centimeter and advises the physician to give 1 cc. of the combined mixtures at intervals of one to two months for three to four doses. There are the usual reactions after these injections. The evidence seems promising, but it cannot be finally evaluated at the moment and hence cannot be recommended for routine use.

(*a*) Alum Precipitated Diphtheria and Tetanus Toxoids: The respective toxoids have been combined and used in immunization. They are injected in the same manner (subcutaneously) as are other toxoids. One cc. of the combined mixture is given and, about a month later, another dose of 1 cc.

These doses are not fixed entities; the amount is variable. Some persons, especially adults, are sensitive to the diphtheria bacillus protein. Here, as with diphtheria alum precipitated toxoid, 0.2 cc. may be injected subcutaneously and the reactions observed (Moloney reaction). If no severe reaction is noted, 0.3 cc. and 0.5 cc. at intervals of two weeks may be injected and then 1 cc. about three months later. If there are severe reactions, smaller amounts may be used—perhaps 0.2 cc. at intervals of two weeks until 1 cc. is given.

If the immunized susceptible person subsequently receives a deep and contaminated wound, especially about the face, or an extensive wound of the body, a stimulating dose of 0.5 cc. of tetanus alum precipitated toxoid must be given. (See Tetanus.)

The reactions are the same as those seen after toxoid injection. These may be an occasional rash, urticaria, or the like. According to Cooke and his co-workers some reactions are allergic in character. They do not seem too important, especially since Peshkin and his co-workers were able to immunize 186 allergic children with two doses of 0.5 cc. each of the combined toxoids with excellent results and no severe reactions.

The reports in the literature seem promising, but the U. S. P. H. S. does not approve of the use of combined tetanus and diphtheria toxoids at the present time.

PERTUSSIS, OR WHOOPING COUGH

Diagnostic Test.—Many cutaneous tests have been described, none of which have any proved value.

Active Immunity.—There are several biologic preparations used to immunize. They are (1) Sauer's vaccine, (2) old fashioned vaccine, (3) Krueger's endoantigen, (4) Topagen, (5) pertussis detoxified antigen and (6) Bell's alum precipitated whooping cough toxoid.

In general, do not inject any of the vaccines into a blood vessel or in areas previously inoculated with toxoid or smallpox vaccine. Do not use frozen vaccine, but keep in a refrigerator at 2 to 10 C.

When the vaccine is contained in vials, go through the preliminary step as described under diphtheria. Stoppers should never be removed, as the vaccine may become contaminated.

(*a*) Immunization Materials: 1. Sauer's vaccine (H. pertussis organisms grown on human blood agar). This is standardized at 10 billion organisms per cubic centimeter. Eight to 10 cc. (80 billion or more organisms) is the total dose injected, 1 cc. being injected subcutaneously in the deltoid area of each arm, 0.5 to 2 cc. in the biceps area of each arm, and 1.5 to 2 cc. in the triceps area of each arm at weekly intervals. Do not inject the same arm twice. Recently Sauer intro-

duced a double strength vaccine standardized at 20 billion organisms per cubic centimeter. The injections consist of three single doses of 1, 2 and 2 cc. weekly in two deltoid and one triceps areas.

If the reactions are severe after any injection, decrease the amount given with each succeeding dose and increase the number of injections.

TABLE 1.—*Dosage Schedule*

H. Pertussis Bacillus per Cc.	10 Billion	20 Billion
Dose 1	1 cc. upper deltoid, left arm	1 cc. deltoid region, left arm
	1 cc. upper deltoid, right arm	
Dose 2	1.5 cc. biceps region, left arm	2 cc. deltoid region, right arm
	1.5 cc. biceps region, right arm	
Dose 3	1.5 cc. triceps region, left arm	2 cc. triceps region, left arm
	1.5 cc. triceps region, right arm	

2. Old fashioned vaccine (H. pertussis of questionable phase characteristics). This is injected weekly in doses of 1 cc. each, four to five times.

3. Krueger's endoantigen. This is the clear extract obtained after subjecting the organisms to ball mill grinding. One cc. is injected and then 1.5 to 2 cc. every other day for six doses. All injections are made subcutaneously. During epidemic periods 2 to 3 cc. may be given subcutaneously once weekly for four weeks.

4. Topagen is somewhat similar to Krueger's endoantigen, the endoantigen being chemically separated. This material is put up in a vial. The physician is advised to drop the fluid into the nostril with an eye dropper two or three times daily for a few weeks.

5. Pertussis detoxified antigen utilizes the products of bacterial metabolism and not the bacteria itself. One cc. of this material may be given for three doses at intervals of two or three weeks. The inoculations are made subcutaneously in the biceps area of the arm.

6. Alum precipitated whooping cough toxoid contains 10 billion organisms per cubic centimeter. Two doses of 1 cc. are given about a month apart. This is not on the market as yet.

(*b*) Clinical Course of Vaccination: Local and general reactions may follow injections of Sauer's vaccine. The severity depends somewhat on the age. The younger the person, the less apt will be the occurrence of reactions. The local ones are redness, induration, pain and swelling. Occasionally there may be slight adenitis.

General reactions such as fever and malaise may occur, but they are not ordinarily severe. Death has been referred to. It is questionable in my mind whether this vaccine has ever caused a fatality. A few patients have had convulsions.

Fewer reactions follow the injection of Krueger's endoantigen and the old fashioned vaccine. Sneezing may follow the local application of topagen.

Pertussis detoxified antigen does not usually cause reactions, but it may. When these occur, they are similar to those seen after Sauer's vaccine.

The local reactions come on shortly after injection, i. e. within six to twenty-four hours. Usually by the end of twenty-four hours these, as well as the general reactions, have begun to subside, although the area of inoculation may be indurated for a few weeks.

(*c*) Results of Vaccination: This has been the subject of debate. Sauer's vaccine is not so effective as is diphtheria toxoid, although no active immune procedure is 100 per cent efficient. It may not prevent the disease in every vaccinated person, but there is evidence to show that if the attacks should occur after vaccination they are much milder in character. Both the Committee on Therapeutic Procedures for Acute Infectious Diseases and on Biologicals of the American Academy of Pediatrics and that of the American Public Health Association feel that from a public health standpoint this vaccine is still in the experimental stage, although the members of the academy group favor the use of Sauer's vaccine in private practice.

A compilation of the results on Sauer's vaccine appearing in the literature has been made by Wyckoff.

These reports, together with the recent experiences of Perkins et al. in Binghamton, N. Y., and despite the adverse findings of Doull, seem to confirm the experience of Kendrick et al., Sauer, Miller and Faber, Mishulow and others. The percentage of established protection in the Binghamton experiment was not so high as in the other reported series. Faber and Miller believe that the percentage of success following the use of vaccine is high enough to include it in the routine program of immunization for infants and young children.

There is no evidence that either Krueger's endoantigen or Topagen is of any proved value. The old fashioned vaccine apparently gave some results in the past (Huenekens). Pertussis detoxified antigen is still being used experimentally. It is said that the immunity lasts from five months to two and one-half years. One author claims 81 per cent protection in 183 exposed. Bell believes that two injections of alum precipitated whooping cough toxoid give as good results as those which follow the injection of Sauer's vaccine.

(*d*) Where and When Injected: Injections are made subcutaneously. Intradermal injections were tried, but they were discontinued because of severe reactions and the many number of injections necessary. Intranasal injections are of questionable importance at the moment. The vaccine may be injected from two to four weeks apart.

TABLE 2.—*Results Appearing in Literature*

Author	Year	Dose 1,000 M. per Cc.	Test Group				Control Group			
			Number	Exposure	Development	Per Cent	Number	Exposure	Development	Per Cent
Silverthorne	1938	120	747	91	1	1	161	27	23	85
Kendrick	1939	80	1,815	415	52	13	2,397	508	348	69
Miller-Faber	1939	80	211	29	9	31	182	32	29	96
Sauer	1939	80	2,453	..	32	..	1,730	..	286	..
Singer Brooks	1939	80	272	42	7	16	256	71	62	87
Doull and others	1936	80	483	..	61	..	406	..	71	..
Seigel and others	1937	80	101	17	9	52	110	47	22	46
MacLean	1939	16-20	513	46	0	0	154	115	89	77

(*e*) Duration of Protection: It has been stated that it probably takes four or five months for immunity to develop after injection of Sauer's vaccine. The actual duration of protection is not known definitely, although clinical experience of the many workers indicates that this may be at least two years. It is not settled whether it might not be a wise procedure to give a stimulating dose each year after active immunization is complete.

(*f*) Age of Vaccination: I have seen infants who had contracted whooping cough as early as ten days after birth, yet the total number of cases in the first

six months of life is relatively low and some passive immunity may be present. For this reason it is considered best to vaccinate against pertussis between the ages of 6 and 9 months. Reactions are also less apt to occur at this age.

Exposees.—Exposees may be given any of the material mentioned under Active Immunity. The results are questionable.

Ten to 20 cc. of convalescent serum may be injected intramuscularly. It likewise is of doubtful value.

Ten to 15 cc. of hyperimmune serum, i. e. serum of persons who have had whooping cough and who have been repeatedly inoculated with whooping cough vaccine over some period of time, may be injected intramuscularly, especially in infants. The laboratory reports are favorable, and the clinical reports appear to be promising.

Mixed Vaccines.—See under Diphtheria.

Addenda.—It may be mentioned that there are those who believe that the matter of whooping cough prevention has not been completely settled. Toxins have been described; whether they are exotoxins or endotoxins is a moot point. A sticky exudate is referred to, the exudate which produces the cough in this disease. It has been thought that the bacteria initiate the disease, that the toxins sensitize the patient and cause the typical lymphocytosis and that acquired immunity is formed against the sticky exudate. None of these beliefs, however, have reached the stage of acceptance.

All we know at present is that the bacteria actually initiate the disease and that all the printed evidence favors the use of H. pertussis in the "disease producing" phase of its existence (phase I) or its alum precipitated toxoid to produce active immunity.

TYPHOID

Diagnostic Test.—There is no diagnostic test that determines susceptibility to typhoid. The Widal test is a laboratory test and is found positive only some time after a susceptible person has become infected.

Active Immunity.—The vaccine has been tried on a large scale in military circles. Its efficiency was demonstrated during the first world war and its continued use justified.

It is unnecessary to vaccinate persons living in large cities where the water supply and sanitary conditions are very good. It should be used for individuals usually above 2 years of age living in those localities where typhoid is endemic, where the water supply is unpurified and the sewerage system primitive; for travelers, for members of the patient's family, for institutional personnel and for persons living in an epidemic area and for the military forces.

Vaccine comes in packages of three vials for individual requirements and also in bulk. It should be shaken before withdrawal.

The usual preliminary procedure should be followed in withdrawing the vaccine from the vials. (See Diphtheria.) Small doses have been recommended for children. This is not felt to be practical, since the child can endure a larger dose than the adult. If the reaction is extremely severe after the first injection, the individual dose should be decreased and the total number of injections increased. The antigen should never be injected in the same area in which other antigens have been recently injected. It is wise to vaccinate only healthy people and in the evening; occasionally it has been recommended to avoid vaccinating females during the menstrual period.

The antigen vaccines are killed typhoid organisms. These are injected subcutaneously in 0.5, 1 and 1 cc. doses every two to four weeks, the doses containing one-half, one and one billion organisms, respectively.

Protection may last a long time, but in many instances it is lost within a year or two and some believe that one reinjection should be made each year in the spring time or at least every two years. It should be stated that reinoculations may be followed by reactions. The amounts recommended for reinoculation have ranged from 0.1 cc. to 1.0 cc.

(*a*) Site of Injection: It is recommended that all injections be given subcutaneously. They have also been given intradermally, but the efficacy of this method has not been evaluated. The vaccine has been given by mouth in capsules. Although agglutinins may be produced in the test animals and protection develops against enteric organisms, the agglutinins are never so high as after parenteral injections.

(*b*) Clinical Course of Vaccination: This depends on the type of vaccinating material and the concentration of the injection. Recruits in the first world war were often inoculated with one injection of triple typhoid vaccine in oil which contained the number of organisms present in all three ordinary injections. The reactions, both local and general, were severe. Even after enteric ingestion of capsules of enteric organisms, there may be nausea, some distress, some abdominal pain and fever.

After the subcutaneous injection there will be some local reaction—redness, fever and induration. This comes on within two to twenty-four hours. Nodulation may form or the arm may become intensely swollen and indurated and all the signs of inflammation may appear. In addition there may be severe malaise, backache, general muscle pain and weakness. However, these reactions are not the common ones and, when they do occur, they do not last longer than thirty-six to forty-eight hours after the injection. After inserting the hypodermic needle subcutaneously, one must always withdraw the plunger before injecting the antigen. If there is blood present, the needle must be withdrawn and the injection made elsewhere. Should the vaccine be injected into the blood stream, the patient may have a violent chill from twenty minutes to a few hours after. This may last approximately twenty minutes and the temperature may go up to 106 F. Do not give such patients hydrotherapy for the temperature, but cover them with blankets and surround them with hot water bottles. Occasionally one of these patients may become unconscious, but this occurrence is rare.

Mixed Vaccines.—Typhoid vaccine is sometimes combined with paratyphoid A and paratyphoid B organisms. They are used extensively. One cc. of the vaccine contains one billion Eberthella typhosa organisms, one-half billion each of paratyphoid A and B (one biologic house has three-fourths billion each of the latter). The doses are the same as for typhoid, 0.5, 1 and 1 cc. given every seven to ten days for three injections. The methods of administration and preparation are the same as those for typhoid vaccine. The reactions are usually more severe and are similar to those following typhoid inoculation. This combination of three organisms causes the same local and general reactions as does the vaccine containing only typhoid vaccine. Within the past few months the Army has started again to use the triple vaccine routinely.

Exposees.—One may inject typhoid vaccines immediately after known exposures, although even a high agglutinin titer produced by the vaccine at this time may not abort the disease in the well exposed individual.

TETANUS

Diagnostic Test.—There is no biologic test for tetanus.

Active Immunity.—Tetanus toxoid is injected subcutaneously in doses of 0.5, 1 and 1 cc. every four weeks or at longer intervals of two months.

(*a*) Clinical Course: The reactions are fairly mild in character, consisting of some redness and soreness about the injection. Occasionally a severe local inflammatory and general response may occur, and the whole arm may become swollen and the patient may have general malaise. All these reactions begin to subside within twenty-four to forty-eight hours. A small nodule may appear under the skin and persist for months. An occasional individual may be sensitized to tetanus and diphtheria toxoid, but this is easily recognized by cutaneous tests.

(*b*) Site of Injection: All injections are made subcutaneously. Intradermal vaccination against diphtheria or tetanus has some disadvantages and no evident superior advantages over conventional measures.

(*c*) Results of Inoculation: Tetanus toxoid was introduced so recently that it is impossible to say how long immunity will last, but the unanimous opinion is that it does immunize.

(*d*) Reinoculation: The protective antibody content of the blood serum possessed by the patient decreases as time goes on. For this reason, a second immunization of 0.5-1.0 cc. should be given one year later (Leake). Persons who have been previously vaccinated with tetanus toxoid and who are subsequently wounded so that there is real danger of tetanus infection must get another "stimulating" dose of 0.5-1 cc. of tetanus toxoid. This takes the place of the usual antitoxin injection. Because this toxoid might sensitize an occasional individual, it is advisable to make a cutaneous test before injecting the stimulating dose.

(*e*) The Age of the Patient: The patient should be vaccinated in early childhood when the local and general responses will be minimal and when the danger of tetanus first occurs, i. e. approximately between the ages of 9 months and 3 years. Reinoculation depends on reexposure and occurs at any age.

Exposees.—Persons who have received contaminated wounds and who have not been vaccinated within a month previously should receive from 1,000 to 2,000 units of tetanus antitoxin intramuscularly. This may not always prevent the disease if the lesion has been near the head or if the injury and exposure are massive. In these patients the dose should be repeated in seven to ten days. Most practitioners inject a combination of tetanus and gas gangrene antitoxin. The person who has been previously actively immunized and is injured is treated as in paragraph *d*.

Special Precautions.—Most physicians who have had some experience in the prophylaxis of tetanus feel that, more important than anything else, even more important than the use of antitoxin, is the physical, free removal of all foreign matter as early as possible by wide incision and excision and an early evacuation of the foreign matter under anesthesia if necessary. Some of the older practitioners (Abt) state that they would rather have such a procedure followed than to have antitoxin.

Clinical Notes, Suggestions and New Instruments

INFANTILE TYPHOID WITH CONVULSIONS

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Because of the infrequent reports of typhoid in infants and its relatively low mortality rate, we are reporting this case, which terminated in death twenty-nine hours after the onset of symptoms. The severe neurologic manifestations throughout the short clinical course so camouflaged the true condition that, without findings of a postmortem examination, correct diagnosis may not have even been guessed.

Fatal infantile typhoid is rare at the present time. Of 30,000 admissions to the Bellevue Hospital, New York City, covering a period of fifteen years up to 1940, 1 case of typhoid fever was recognized under the age of 2 years.[1] Recent reports indicate that approximately 2 per cent of typhoid cases are in infants[2] and that out of this group a negligible percentage is fatal as compared to a reported 12.5 per cent mortality a few years ago.[3]

Typhoid is essentially a disease or injury of the lymphogenous and hematogenous organs produced by the blood borne Eberthella typhosa. Accumulation in the typhoid lesions of large, pale mononuclear cells with strong phagocytic activity has been a constant histologic finding. Whether these are endothelial cells, wandering macrophages or specialized mononuclears produced by the body in response to a specialized stimulus is a question not yet answered.[4] The mechanism by which the organism produces the disease is likewise a much controverted subject. Possibly the virus—Vi antigen—associated with Eberthella typhosa is responsible for the virulence accredited to the organism itself. Apparently this thermolabile filtrable substance, when injected intracerebrally into the rabbit, is capable of producing typhoid with severe terminal diarrhea. This same virus also appears capable of stimulating the common intestinal saprophytes to a degree of pathogenicity.[5]

The pathway of the organism from the mouth to the blood stream is briefly thus:

1. Passage through the upper part of the gastrointestinal tract in food or drink contaminated with feces from a typhoid patient or a healthy carrier.
2. Invasion of lymphoid tissue of the small bowel.
3. Transport of the bacilli to the regional mesenteric lymph nodes draining the small intestine.
4. Multiplication of the bacilli in these nodes.
5. Passage up the thoracic duct.
6. Liberation of the organisms into the venous blood of the left innominate vein.[6]

REPORT OF CASE

Illness.—E. M., a boy aged 21 months, ate his supper Aug. 16, 1941 and played with other children until 8 o'clock. At this time he began hiccuping, fell to the floor unconscious and rolled his eyes directly upward, where they "set" for approximately one minute. The parents gave him a warm enema and plunged him into a tub of hot water—acts which apparently terminated the first attack. An hour later the baby was attacked in a similar manner, having acted normally in the meantime. The

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third attack, seen by the physician at 10:30 p. m., resulted in bilateral convulsions of all extremities and stopped spontaneously after approximately thirty seconds. At 1 a. m. the patient had a convulsion involving the entire left side. After one minute the left side became semiflaccid, and the convulsion became a persistent right-sided one.

History.—Inquiry into the baby's family history revealed that two cousins were interned in an institution for the epileptic. The mother and grandmother admitted having occasional "fits." A sister had died in infancy of "acute colitis." The mother stated that the child had been passing "worms"; but her description of these was hazy and colored with a great deal of imagination. The baby had been well until the present sudden illness.

Examination.—The boy was well nourished and developed. The right eyelids, right facial muscles, right side of the tongue, right thoracic and abdominal muscles, right cremasteric muscle and right extremities were in clonic convulsions occurring regularly at the rate of 60 per minute. The left extremities were flaccid. The skin was moist, clammy and remarkably pale with beads of cold perspiration covering the forehead and neck. The eyes were open. Nystagmus movements were seen to accompany each convulsion, the slow movement of the eyeballs carrying the pupils from midposition to the upper left quadrant of the orbits, thence a rapid movement bringing them back to midposition. In addition to the right eyelid convulsions, both lids blinked at approximately normal intervals. Both pupils were regular, dilated—the left larger than the right—and showed no reaction to light. The tympanic membranes were shiny and normal in appearance. The tonsils and pharynx showed no evidence of inflammation.

The heart rate was 180 and regular. The breathing was rapid but not particularly labored. The temperature was 101 F. Auscultation and percussion of the chest revealed nothing of significance. The blood pressure was 150 systolic and 60 diastolic.

The abdomen, somewhat generally distended and tympanitic, showed a puffing out of the right midabdominal region. Peristalsis was at no time observed. All the deep reflexes were exaggerated on the right side.

Course.—At 3 a. m. the patient was removed to the hospital. Fluoroscopy revealed no foreign body in the trachea; however, it did show a great deal of gas throughout the abdomen. Blood count at this time revealed white blood cells 10,000, red blood cells 4,500,000, blood calcium 10.1 mg. per hundred cubic centimeters. The stool showed 4 plus blood and pus but no ova or parasites. Medium was inoculated for the culture of Eberthella typhosa and dysentery bacilli.

At 5 a. m. the white blood count was 6,000 with 28 per cent lymphocytes and 5 per cent mononuclears. Stool examination revealed a great quantity of blood, pus and mucus. The child at this time seemed exhausted. The convulsions continued. There was a spontaneous semiliquid bowel movement.

At 3 p. m. a spinal puncture was done. The pressure, although not measured, was evidently greater than normal. The cell count was 1 lymphocyte and 2 neutrophils per cubic millimeter. (Culture of spinal fluid showed no growth after three days' incubation.) The sedatives and fluids administered up to this time had apparently little effect. Blood was taken for the Widal examination. (This proved negative.)

At 5 p. m. August 17 the convulsions ceased, only to begin at 8 o'clock on the left side. The right pupil became larger than the left and the clonic convulsions shifted to the left side with involvement of the same corresponding sets of muscles. The right extremities became flaccid with a complete shift of the neurologic signs from the right to the left. The neck became moderately rigid; the temperature advanced to 107 F. The heart rate increased to 230. The baby became cyanotic and died at 1:45 a. m.

Autopsy.—The mucosa of the entire sigmoid region was seen to be dotted with minute ulcers, each with a yellow center and a red periphery. The largest of these ulcers was ⅛ cm. in diameter. This area of ulceration and inflammation ended rather abruptly at the upper limit of the sigmoid. The transverse and ascending colon appeared normal. The mesentery was studded with innumerable large purplish lymph nodes, some of which were 2 cm. in length. These were larger and more numerous adjacent to the sigmoid and distal part of the ileum.

The lumen of the distal ileum was filled with blood. Its mucosa was remarkably injected and showed longitudinal, raised oval elevations. These elevations—apparently Peyer's patches—were highly inflamed but not ulcerated. In addition to these patches there were small ulcerations similar to those observed in the sigmoid. This ileitis extended 3 feet above the ileocecal junction. Except for a tense splenic capsule, no other gross pathologic condition was encountered in the thorax or the abdomen.

Gross examination of the cranial contents showed the cerebral gyri to be flattened and the sulci between them narrowed. The brain was pallid and on multiple section gave the appearance of mild edema.

Bacteriologic Examination.—With sterile precautions, fluid was aspirated from the cisterna magna before the autopsy was begun. A small vessel was punctured in the process with resultant contamination of the fluid with blood. Culture of this material on blood agar, eosin-methylene blue and desoxycholate mediums produced numerous round, small, translucent colonies which on gram stain showed slender gram-negative bacilli. On bismuth sulfite medium the colonies were black. These bacilli were highly motile, produced no acid or gas in lactose mediums and agglutinated with Eberthella antiserum diluted to 1:16,000. Autoagglutination or agglutination with Salmonella and Shigella antiserums was not observed.

Microscopic Examination.—Nothing significant could be demonstrated in the spleen or liver. The mucosa of the sigmoid and ileum showed the surface necrosis in the ulcerated areas. The mesenteric lymph nodes and Peyer's patches contained large, pale staining mononuclears in their sinuses. It was noted also that the germinal centers of Peyer's patches were packed with these cells, many of which appeared to be making their way through the germinal center wall of lymphocytes to the cortical lymph sinuses. Some of these large mononuclears had ingested lymphocytes. Typhoid bacilli could not be demonstrated in the lesions. The cerebrum showed greatly dilated perineuronal and perivascular spaces, vessels devoid of blood, a vacuolated cortex and the general picture of cerebral edema.

COMMENT

Farrell[7] insists that the incidence of typhoid in infancy and childhood is much more frequent than is generally thought. He suggests that the failure to recognize the possibility of typhoid in differential diagnosis and a consequent failure to make adequate laboratory studies has resulted in diagnostic errors. This in turn has caused a paucity of reported cases. Naturally, this has led to the belief that typhoid in infants is so rare as to be worthy of little consideration in differential diagnosis.

That the lesion of typhoid in this case could be studied in its early stage is a rare opportunity. The fact that the large pale mononuclear cells, so abundant in the germinal centers of Peyer's patches, are seen apparently passing through the germinal center wall of lymphocytes into the lymph node sinuses suggests a possibility as to the origin of these cells. The relative scarcity of these cells in the mesenteric lymph nodes and their absence in the spleen and liver lend further weight to this suggestion as to origin.

The convulsions in this uncomplicated case of typhoid were probably due to the overwhelming toxemia with cerebral inflammation and edema.[8] The family history of epilepsy lent materially to the diagnostic confusion and emphasizes further the necessity of careful laboratory studies, in addition to thorough histories, in these cases of infantile convulsions.

Station Hospital.

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THROMBOSIS OF RENAL ARTERY SIMULATING CORONARY THROMBOSIS

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We wish to report this case for the following reasons: The patient presented a diagnostic problem on admission. Few cases of thrombosis of the renal artery have been reported in the literature. The clinical manifestations of renal artery thrombosis are as yet not well recognized and therefore not thought of. Early recognition of the syndrome and proper therapy may prevent extensive renal pathologic changes.

While many cases of renal infarction due to emboli [1] and thrombosis of the small branches of the renal artery secondary to nephritis,[2] trauma [3] and periarteritis [4] have been reported, we found in the literature only an incomplete description of the syndrome, reported by one of us,[5] and 3 cases of fatal thrombosis of the renal artery [6] associated with general vascular disease.

There is no complete description, as far as we can find, in any textbook or periodical of the clinical manifestations of thrombosis of the renal artery.

The case we are about to present simulated to some extent coronary thrombosis.

REPORT OF CASE

F. D., a white man aged 58, the manager of a garage, was seized with severe pain below the left nipple while walking in the street. He was admitted to Temple Universty Hospital in a state of shock. The pain was agonizing and only slightly relieved following the administration of ½ grain (0.032 Gm.) of morphine subcutaneously. He perspired profusely and had the desire to defecate.

The pulse was full and 90 a minute, the respiratory rate was 30 and the blood pressure was 190 systolic and 100 diastolic. He had an ashen gray appearance. The peripheral vessels were slightly thickened. The size of the heart was within normal range and the muscle tone of the heart was good. The supracardiac area of dulness was slightly increased. There was a short systolic murmur at the apex which was not transmitted. The second aortic sound was accentuated. There was no evidence of congestive cardiac failure and the lungs were resonant. The left rectus muscle was slightly rigid. There was some left sided abdominal tenderness and increased rigidity of the left lumbar muscles.

Because the patient experienced a slight attack of precordial pain following effort several weeks prior to this episode coronary thrombosis was suspected. An electrocardiogram taken on admission failed to reveal any definite abnormalities.

A few hours later the pain shifted more to the region of the left kidney. Despite the fact that the patient was under the influence of morphine the left lumbar muscles became more rigid, and there was definite tenderness of the kidney.

Because of the localization of the pain, its severity, well defined shock and prostration, a renal disorder was suspected and a provisional diagnosis of renal calculus or thrombosis of the renal artery was made.

Examination of the urine revealed occult blood and many red blood cells. The pain soon became localized over the region of the left kidney. The abdomen became distended but there was still some precordial pain present. The temperature was elevated for four days ranging between 99 and 100.2 F.

There was definite leukocytosis (19,700) with a polymorphonuclear count of 86 per cent.

After several days the urine cleared up. The patient commenced to feel more comfortable and after four days he was apparently free of pain. The abdominal distention diminished and the blood pressure on the fourth day was 150 systolic and 90 diastolic.

A second electrocardiogram was taken which failed to reveal any abnormalities.

On the sixth day intravenous urography was done which revealed the following: The upper calices on the left side filled out well and were of normal appearance. The middle and the lower calices filled out poorly and suggested an area of infarction. No renal calculi were visualized. We therefore felt by exclusion that the diagnosis of thrombosis of a lower main branch of the left renal artery was justified. An embolic phenomenon was ruled out, since there was no evidence of systemic disease to predispose the patient to it.

One of us (J. B. W.) has been studying cases of this type for the past six years and the following remarks are based on observations made on 11 cases:

Renal artery thrombosis is not an uncommon manifestation of generalized atheromatosis. In most of the observed cases there was a fairly typical syndrome which would lead one to suspect the lesion.

The attacks are ushered in with severe pain over the kidney region or in the loin, depending on the site of the lesion, and resemble renal colic in many respects.

Frontal headache, backache, nausea, generalized abdominal pain and shock are characteristic symptoms in this vascular catastrophe.

In the majority of cases the blood pressure was elevated, although 4 cases did not show any elevation in pressure. The temperature tended to fluctuate for a few days between 99 and 102 F. In several cases there was frank hematuria. Eight cases showed occult blood in the urine. In 3 cases the urine was not examined until the third and fourth days following the attack. In these specimens of urine blood was not found.

In most cases there was radiation of the pain to the lower part of the abdomen and the back. In 4 cases the pain radiated to the thighs. Six cases showed definite vasovagal disturbances—faintness and dizziness. Five of these cases also showed evidence of a sympathetic paralytic ileus.

On intravenous urography all the cases we studied showed definite filling defects on the affected side. Retrograde pyelography, however, which was done in 5 of these cases, failed to show any abnormalities.

Eight cases, seen immediately following the acute catastrophe, showed definite leukocytosis fluctuating from 19,000 to 34,000 cells with a high polymorphonuclear count averaging 89 per cent.

All these cases showed definite evidence of atheromatous changes particularly involving the proximal portion of the aorta.

In 2 cases the follow-up intravenous urography done six and nine months respectively following occlusion of the renal artery showed normal configuration of the calices.

Intravenous urography in 1 case, done eleven months after the attack, revealed an unchanged filling defect in the affected kidney.

One patient, seen in consultation, died in shock due to urinary suppression. Thrombosis of a main branch of the renal artery was found at autopsy. (It is quite possible that the administration of mercurial diuretics and failure to combat shock by available methods might have contributed to the fatal outcome.)

CONCLUSION

A syndrome associated with severe pain over the kidney region, frontal headache, nausea, shock, leukocytosis, hematuria, backache and abdominal tenderness seen in persons who present evidence of atheromatous cardiovascular disease should make one suspect thrombosis of the renal artery.

The prognosis is favorable if the treatment is similar to that used in coronary thrombosis. In all the cases that we observed an uneventful recovery was made, with the exception of the 1 seen in consultation.

It is possible that unrecognized and untreated lesions of this type may be responsible for many cases of hypertension complicating atheromatosis.

Its recognition and proper management may be an important step in the prevention of this complication as well as of extensive renal damage.

1829 Pine Street.

Presented at the staff meeting of Temple University School of Medicine, Philadelphia, Nov. 14, 1941.

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Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

HOWARD A. CARTER, Secretary.

ABSTRACT OF MINUTES OF MEETING OF COUNCIL ON PHYSICAL THERAPY, DEC. 12 AND 13, 1941

The seventeenth annual meeting of the Council on Physical Therapy was held at the headquarters of the American Medical Association, Dec. 12-13, 1941. Dr. Harry E. Mock, Chairman, presided. The following members were in attendance: Dr. H. E. Mock, Dr. Eben J. Carey, Dr. Anthony C. Cipollaro, Dr. W. W. Coblentz, Dr. J. S. Coulter, Dr. A. U. Desjardins, Dr. W. E. Garrey, Dr. Frank H. Krusen, Dr. Frank R. Ober, Dr. Ralph Pemberton, Dr. H. B. Williams and Mr. Howard A. Carter, Secretary.

GRANTS FOR RESEARCH

After reviewing the report of the Committee on Research, it was the opinion of the Council that the grants had yielded excellent results in basic scientific work. Not only has much work been accomplished by the investigators, who have been assiduous in their application, but the papers which have been published redound to the credit of the Council.

Revisions of the Official Rules of the Council occupied considerable time. The revised rules will be published at an early date.

ARTIFICIAL LIMBS

The question of whether the Council was prepared to consider artificial limbs, with the object of including them on the list of accepted devices, was discussed. Since making and fitting an artificial limb is a matter of physician-patient-manufacturer relationship, and since much depends on the art of fitting by the leg maker, the Council decided not to consider individual makes of artificial limbs but to deal with the subject in a more general way. Since the meeting, the Handbook on Amputations has been published.

EDUCATION

Several years ago the Council appointed a group of Consultants on Education. These consultants were asked to encourage local medical societies to reserve at least one program during the year for subjects dealing with physical therapy. Consultants were available for speaking engagements, and they suggested to local program chairmen speakers specialized in physical therapy to appear on programs. Efforts of the consultants are now beginning to bear fruit; the Council surveys with pleasure the activities of these consultants. Many more schools of medicine are making provisions for instruction in physical therapy for the undergraduate student. It is gratifying for the Council to know that articles on internal medicine, surgery, dermatology and in fact all branches of medicine more and more contain references to physical agents and their therapeutic value. It was reiterated by the Council that the important agents employed in physical therapy are heat, massage and therapeutic exercise and that 90 per cent of the therapeutic value was obtained from them, while only 10 per cent was realized from mechanical apparatus.

ARTIFICIAL RESPIRATION

Evidence regarding automatic appliances for administering mechanical respiration was considered most carefully. There was evidence to indicate that artificial respiration applied by means of positive and negative pressure was effective in reviving asphyxiated victims; no evidence was presented to indicate that burst lungs and other pathologic conditions were caused by this form of resuscitation. At the same time the Council pointed out that life saving crews should have a complete knowledge of manual artificial respiration and reaffirmed its previous statements on the importance of giving instruction in the Schafer prone pressure method of artificial respiration to the general public. Apparatus for aiding in life saving, whether inhalator or resuscitator, is usually not on the scene of the accident and it might take anywhere from five minutes to one-half hour before the apparatus is applied to the patient. It is vitally important that artificial respiration be administered immediately. A report was made on the Council's survey of artificial respiration, in which many industrial organizations, police and fire departments and government agencies are cooperating. Data are being received on many forms of artificial respiration, both manual and mechanical. That further laboratory evidence might be made available, the Council voted to ask the Board of Trustees for substantial funds to aid in research in this important field.

RESPIRATORS

Activities of the Consultants on Respirators were reported. The Council observed that the term "iron lung" had crept into the literature as a substitute name for respirator. It was felt that this term was scientifically inaccurate and that devices for giving prolonged artificial respiration should not be accepted under this name.

The Council voted to express its appreciation to Mr. M. K. Reynolds for his specifications on how to assemble a simple workable respirator in case of a poliomyelitis epidemic.

PHYSICAL THERAPY TECHNICIANS

Medical preparedness as related to physical therapy was discussed at length. It was pointed out that there was a shortage of trained physical therapy technicians to supply any army needs. The present plan in the army during war time calls for three hundred general hospitals of one thousand beds each. This means that two thousand one hundred physical therapy technicians will be needed. Then the question arose as to the proper method of training technicians. It was decided that the Council on Physical Therapy should cooperate with the Council on Medical Education and Hospitals to arrange for streamlining the curriculums in the several accepted schools so that the technicians might be trained in six months instead of nine. This means that technicians will not receive the requisite amount of clinical practice but that this instruction will be obtained in the course of active duty in the army. After the necessary hours have been put in at practical work a diploma will be awarded, provided the student's record is otherwise satisfactory. Between one thousand four hundred and one thousand six hundred registered physical therapy technicians are now available; this is inadequate to supply the demand. Hence the Council concurred with the suggestion of the technicians that a number of physical therapy assistants be trained. The training, however, will be much less—six weeks, for example—than that given to regular technicians. The Council adopted the motion that publicity be given to the fact that there is an extreme need for training physical therapy aids in the army and that those students who have had two years of college work, including courses in physics and biology, be especially approached and encouraged to enter courses of physical therapy in schools approved by the Council on Medical Education and Hospitals.

The Council stands ready to give advice to any physican who is interested in special training in physical therapy in order to head a department in a medical school or army hospital. A new publication of the Council, "Manual on Physical Therapy" which will consist of terse monographs relating to physical therapy, may be used by civilian physicians and army medical officers. It is expected to be published serially in *War Medicine* and later collected for distribution as a small manual.

RADIO INTERFERENCE

A report was read before the Council concerning the activities in eliminating radio interference by short wave diathermy equipment. It now appears that the most satisfactory way of avoiding interference will be the selection of three radio bands in harmonic relationship and that the tolerances of the high frequency energy generated be confined to these channels at approximately the same tolerance as that of the broadcasting stations. Those devices not designed to operate on set frequencies will have to be screened. Research and tests on sample apparatus which have been submitted to the Council and to the National Bureau of Standards have proved that diathermy apparatus can be made to meet the requirements, although it appears that the cost will be somewhat more. The Federal Communications Commission, with which the Council is cooperating, has not as yet assigned the frequencies or established the tolerances.

ULTRAVIOLET LAMPS FOR DISINFECTION

The Council reviewed its activities in connection with the acceptance of ultraviolet lamps for disinfecting purposes. It is the opinion of the Council that the publication of a report on the subject was as far as it cared to go at the present time.

APPARATUS ACCEPTED

The 1942 edition of "Apparatus Accepted" was presented and announced as now ready for distribution.

AN APPRECIATION

The Council on Physical Therapy desires to take this opportunity to express its feeling of gratitude and appreciation of the services of the following consultants, whose assistance in carrying out the work of the Council has been given so freely:

Drs. Fred L. Adair, Walter M. Boothby, Milton B. Cohen, W. Allen Conroy, Alexander Day, Geza de Takats, Samuel Feinberg, Hart Fisher, Alexander Hollaender, Archibald Hoyne, K. K. Jones, Leland McKittrick, Harry E. Mock Jr., Stuart Mudd, Tell Nelson, S. L. Osborne, Winthrop Phelps, O. H. Robertson, E. C. Stakman, Lauriston Taylor, Ralph Waters, W. F. Wells and Mr. J. C. Steinberg.

Audiometers and Hearing Aids.—Drs. C. C. Bunch, George M. Coates, E. P. Fowler, W. E. Grove, Isaac Jones, Douglas Macfarlan, C. Stewart Nash, Horace Newhart, Paul Sabine, B. R. Shurly and W. P. Wherry.

Educational Work.—Drs. Frances Baker, Benjamin Boynton, Muriel Case Downer, Earl C. Elkins, F. H. Ewerhardt, Richard Kovacs, Fred B. Moor, W. H. Northway, William Schmidt, Walter M. Solomon, Arthur L. Watkins and Walter J. Zeiter.

Artificial Limbs.—Drs. S. Perry Rogers, Paul Steele and Philip Wilson and Messrs. McCarthy Hanger Sr., W. E. Isle, J. B. Korrady, Joseph Spievak and David E. Stolpe.

Electrocardiographs.—Drs. A. R. Barnes, George Fahr, Harold E. B. Pardee, W. D. Stroud, Carl J. Wiggers and Frank N. Wilson.

Respirators.—Drs. W. B. Cannon, Edward L. Compere, Charles McKhann and James Wilson.

WESTINGHOUSE CONSTANT INTENSITY STERILAMPS

(Operating Room, Hospital Nursery and Hospital Ward Models)

ACCEPTABLE

Manufacturer: Westinghouse X-Ray Company, Long Island City, N. Y.

The Westinghouse Constant Intensity Sterilamp Units, Operating Room, Hospital Nursery and Hospital Ward Models, are designed to provide a more favorable environment for the care of patients by lowering the bacterial contamination level of the air surrounding the patient. These lamps produce essentially monochromatic ultraviolet radiation, wavelength 2,537 angstroms, and are mounted in fittings of various types for installation in operating rooms, nurseries and in isolation and contagious wards.

In appearance the Sterilamp is a slender rod-shaped glass tube flaring slightly at each end where the electrodes are located. The high emission cold electrodes and mercury vapor combined with certain rare gases under very low pressure are contained in the high transmission glass envelop having a radiation cut-off at approximately wavelength 2,200 angstroms. In the table is the energy distribution of a standard Sterilamp operating at 40 milliamperes.

Sterilamp units are self contained and operate on 115 volt, 60 cycle alternating current circuits. Essential parts are the sockets and transformer housings, intensity adjusting control, louvers (where needed) and one or more straight or curved Sterilamps. These parts comprise the chassis, which can be wall or ceiling mounted or attached directly to existing illuminating fixtures.

Nursery-type Sterilamp units, installed over or near bassinets, are equipped with adjustable baffles to prevent exposure of the infants to ultraviolet radiation. The baffles permit arrangement to shade the bassinets, the radiation falling on the area above and below them.

Lamps installed in isolation and contagious wards are similar to those used in the nursery, each equipped with baffles to shade the beds. An irradiated field is maintained above and below the beds; the aisleways used by nurses and attendants are also irradiated. Two Sterilamp units may be used on either side of the ward entrance as a barrier to the passage of pathogenic organisms in or out of the ward.

For use in operating rooms the Sterilamps are arranged to suit varying requirements. A typical arrangement shows a unit attached to the central surgical lighting fixture or mounted on either side of it, and four auxiliary Sterilamp units mounted on each of the three walls and one over the entrance.

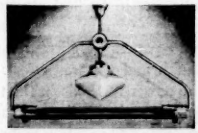
Sterilamp installation includes a control cabinet containing a compensator for maintaining the radiation intensity of the central unit throughout the life cycle of the tubes and an adjustable regulator, equipped with a pointer handle and graduated dial, for varying the intensity. The control cabinet is equipped with two mercury switches, one for the central Sterilamp circuit and the other for the auxiliary Sterilamp circuit. The control may be set for the approximate time allotted to the operation, and this is designed to vary the intensity of the central unit to that recommended as safe tissue tolerance for the time of the operation.

Energy Distribution

Wavelength in Angstrom Units	Energy Radiated in Microwatts per Square Centimeter at 1 Meter
2,537	26.00
2,652	0.793
2,804	0.027
2,894	0.037
2,967	0.135
3,022	0.066
3,129	0.510
3,654	0.435
4,047	0.514
4,359	1.560
5,461	0.850
5,780	0.185

The term "Constant Intensity" in the name of the unit refers to a plan of contract inspection carried out by the firm. The plan of inspection is carried on in this manner: At the time of installation each unit is calibrated by the firm's representative with an SM-200 Ultraviolet Meter (Council accepted). The unit is inspected at periodic intervals thereafter, and the replacement of the tube is ordered when the compensator will no longer restore the constant intensity. When operated at their rated currents, the Sterilamps lose their output of radiation at 2,537 angstroms with age and reach 50 per cent of their initial output after four thousand to six thousand hours of continuous burning (six to nine months).

In its investigation of the Sterilamp, the Council found that the ultraviolet output of a single tube ranges from 16.5 to 18.2 microwatts per square centimeter; since two tubes are used in a unit, the ultraviolet output is doubled or is 33 to 36 microwatts per square centimeter at 1 meter from the lamp unit. These measurements show that the ultraviolet output of the lamps complies with the Council's requirements of 20 microwatts per square centimeter at 1 meter from the unit. The requirements are set forth in the Council article "Acceptance of Ultraviolet Lamps for Disinfecting Purposes."



Westinghouse Constant Intensity Sterilamps (Operating Room, Hospital Nursery and Hospital Ward Models).

The production of ozone is probably not "controlled" intentionally as claimed by the firm, and if it is generated intentionally in an amount sufficient to disinfect or "protect" areas "not directly irradiated" it will be injurious or at least objectionable to the occupants.

The Council on Physical Therapy voted to accept the Westinghouse Constant Intensity Sterilamp Units—Operating Room, Hospital Nursery and Hospital Ward Models—for inclusion on its list of accepted devices.

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SATURDAY, MAY 2, 1942

THE ATLANTIC CITY SESSION

Elsewhere in this issue (p. 37) appears the special information relative to the ninety-third annual session of the American Medical Association, which will be held in Atlantic City, June 8 to 12. The reservations already made by many of the leading hotels in Atlantic City indicate that an excellent attendance may be anticipated. Indeed, several of the hotels are already reserved to their capacity. The appreciation of the medical profession should be extended to the Local Committee on Arrangements for its continuous effort to insure the usual smooth running arrangements associated with the conduct of a session in Atlantic City. Many alumni and fraternity organizations have planned special functions, and the Woman's Auxiliary has developed an extensive program with a number of distinguished guests and speakers. Many officials of the federal government associated with the war effort are scheduled to participate in some of the programs.

Attention is called particularly to the program of the general scientific meetings, which appears on page 48. It will be observed that one session is an Inter-American meeting with participants from some of our neighboring countries. Another session is devoted largely to military-medical problems and still another session is designed to bring to the attention of visitors recent advances in medical practice.

The programs of the scientific sections are replete with papers of current interest in the field of public health and the war effort. There are symposiums on the newer methods in the treatment of infections of the sinuses and of poliomyelitis. There are round table discussions and question and answer periods, which proved so popular in previous meetings. Special attention should be called also to the program of the Section on Industrial Medicine and Public Health (p. 56) as an example of the contribution of the American medical profession to the war.

The meetings of the Section on Miscellaneous Topics are designed particularly to cover the fields of general practice and legal medicine. Here are two unusual programs which should have great appeal.

Applications for the Scientific Exhibit were well beyond the capacity of the available space. Special lectures and demonstrations have been planned on poliomyelitis, diabetes, the work of the Selective Service and on civilian defense. The motion picture program (pp. 78 and 79) is a further indication of the vast progress that has been made in visual education. Certainly few physicians can fail to find in the material thus made available much that will prove of exceeding value.

FIVE THOUSAND PHYSICIANS NEEDED IMMEDIATELY FOR THE ARMY MEDICAL DEPARTMENT

Under the heading of Medicine and the War in this issue of THE JOURNAL appears an official announcement from the Procurement and Assignment Service indicating that five thousand physicians are needed immediately for the Army Medical Department. The plan under which recruitment will proceed was developed at a meeting held in Washington on April 24. To this meeting all the state chairmen of the Procurement and Assignment Service of the states east of the Mississippi River were invited. A second meeting will be held in Omaha on May 8 for all the state chairmen of the Procurement and Assignment Service and representatives of the Army Medical Department of states west of the Mississippi River.

The enrolment forms and questionnaires have been going steadily into the mails for more than a week. If, therefore, any physician fails to receive his enrolment form and questionnaire before May 9 he should write at once on that date to the National Roster of Scientific and Trained Personnel in Washington, requesting a duplicate form together with the letters of instruction. Reports from Washington indicate that those physicians who have received the enrolment forms have in a tremendous number of cases filled them out immediately and returned them, and the forms are pouring into the Washington headquarters. The complete functioning of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians demands the complete cooperation of the medical profession. Since this organization was created to aid the medical profession in meeting the needs of the Army, the Navy and the civilian population, physicians should accept the responsibility and enroll immediately.

The new form of recruitment does not apply to dentists and to veterinarians, since there does not exist any immediate shortage in these groups. It does apply particularly to the medical profession, since the Army still demands 6.5 doctors for every thousand men enlisted and since it will require more than eleven thousand physicians by Jan. 1, 1943 in addition to the five thousand that must be enlisted immediately.

The outline published under the heading of Medicine and the War gives information as to the rank which

physicians may anticipate in relation to their ages and special qualifications. It will be observed that special clearance will be required on all physicians who are to receive advanced rank. For this purpose the special evaluations and classifications developed by the special committees of the Division of Medical Sciences of the National Research Council, the headquarters of the American Medical Association, the certifying boards and the special societies are being utilized.

The winning of the war is a race against time. Among the agencies involved in the procurement and assignment of medical personnel are the headquarters of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, the consultant office in the headquarters of the American Medical Association, the personnel divisions of the offices of the Surgeon Generals of the Army and the Navy, the division concerned with the Air Force, the Corps Area Headquarters, the Corps Area offices of the Procurement Service and the state chairmen. There is much interlocking and intercommunication of these various agencies, which have been evolved rapidly to meet the current emergency. The complete cooperation of the individual physician is vital in securing the best results as far as concerns the provision of medical service for the armed forces and the civilian population.

SULFANILAMIDE FAST GONOCOCCI

Since the discovery of the phenomenon of artificially acquired serum fastness and arsenic fastness by spirochetes, the possibility of the spread of drug resistant strains of pathogenic micro-organisms to the general population has been of epidemiologic interest. About three years ago demonstration was made that the gonococcus readily acquires an in vitro resistance to the newly introduced sulfonamides. Boak,[1] Westphal [2] and others, for example, showed that all strains of the gonococcus tested by them readily acquired a tolerance to relatively high concentrations of sulfanilamide or sulfapyridine if cultivated in a medium to which gradually increasing amounts of these drugs were added. The Bangs [3] showed that this acquired drug fastness may be retained for at least a year on subsequent cultivation on mediums free from the drug. Working with experimental gonococcic infection of the chorioallantoic membrane of embryo chicks, the Bangs [3] also showed that the minimum dose of sulfanilamide adequate for the cure of routine gonococcic infection of the chick embryo is wholly ineffective when tested against sulfanilamide tolerant strains, approximately ten times the routine concentration of the drug being necessary to effect a cure.

Following laboratory [3] and clinical [4] evidence that sulfathiazole is more effective therapeutically than the earlier sulfonamide compounds, Carpenter, Charles and Allison [5] of the School of Hygiene, Johns Hopkins University, tested the power of the gonococcus to acquire resistance to sulfathiazole. In control tests they found that within fourteen days all strains of gonococci grown on gradually increasing concentrations of sulfanilamide acquired at least a tenfold sulfanilamide tolerance. This acquired tolerance was apparently specific, since the adapted micro-organisms were still fully susceptible to sulfathiazole. Attempts made to grow the same strains in gradually increasing concentrations of sulfathiazole, however, were unsuccessful. After seventy-four days' growth in their minimum concentration of this drug (0.002 per cent), none of the strains had acquired the ability to grow in their next higher concentration.

The failure of the gonococcus to develop resistance to sulfathiazole suggests that sulfathiazole fast strains are not likely to be developed in the clinic or to be spread to the general population. Dissemination of sulfanilamide or sulfapyridine fast strains, however, is a theoretical possibility. Carpenter and his colleagues believe that the inability of the gonococcus to develop a tolerance to sulfathiazole accounts for the relative clinical efficiency of this drug. Titration in the chick embryo convinced the Bangs that sulfathiazole is three times more effective therapeutically than sulfanilamide.

1. Boak, R. A.; Charles, R. L., and Carpenter, C. M.: Pub. 11, American Society for the Advancement of Science, Science Press, 1939, p. 118.
2. Westphal, Louise; Charles, Ruth L., and Carpenter, C. M.: J. Bact. **39**: 47 (Jan.) 1940.
3. Bang, F. B., and Bang, Betsy: Proc. Soc. Exper. Biol. & Med. **46**: 527 (April) 1941.
4. Mahoney, J. F.; Wolcott, R. R., and Van Slyke, C. J.: Sulfamethylthiazole and Sulfathiazole Therapy of Gonococcal Infections, Am. J. Syph., Gonor. & Ven. Dis. **24**: 613 (Sept.) 1940. Burkholder, T. M., and Bang, Frederick: Use of Sulfathiazole and Sulfamethylthiazole in Treatment of Gonorrheal Urethritis, J. Urol. **44**:541 (Oct.) 1940.
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Current Comment

FAMILY NUTRITION

As a part of its contribution to the campaign for improved nutrition the Philadelphia Child Health Society has published a monograph, with the aid of a grant from the Beneficial Industrial Loan Corporation, entitled "Family Nutrition." This monograph covers the general subject of nutrition, methods of measurement of nutritional status, the dietary value of common foods, nutritional needs, the relationship of food intake and appetite to the nutritional status and some considerations of balanced diets and balanced budgets. The pamphlet concerns even the child who will not eat what he needs because the dinner table is too often a battleground or an amusement park. Menus for each of five groups of families covering two week periods are provided based on family income. As a war measure the pamphlet is offered for free distribution to those teaching nutrition in formal school classes, those holding nutrition classes or meetings as a part of the war program, Red Cross workers, women's

club leaders and others who may need a monograph of this kind. The monograph is obtained by writing to the Philadelphia Child Health Society, 311 South Juniper Street, Philadelphia.

THE KILLING OF BACTERIAL SPORES BY AGITATION

Bacterial spores are notoriously resistant to injurious influences. Heat, disinfectants and desiccation, which are fatal to the vegetative forms of bacteria, fail to kill the spores of the same or other species of organisms. The use of the shaking machines in bacteriologic laboratories for the killing of spores has been almost unnoticed, although Meltzer apparently observed this phenomenon nearly a half century ago. Last year an observation led Curran and Evans[1] to undertake experiments to demonstrate the effect of agitation on spores. In the presence of abrasives they subjected suspensions of spores of test organisms to agitation in the shaking machine at 430 shakes per minute with a stroke amplitude of 1⅜ inches. The samples of spores and vegetative cells were suspended in distilled water or broth in 8 ounce bottles. Among the several abrasives used in the experiments were sand, emery, silicon carbide, pyrex chips, alundum and small glass beads. The criterion of germicidal activity was the number of spores that survived five hours of shaking. The difference between the number of colonies that developed on glucose extract agar plates before and after prolonged shaking with abrasives was regarded as a measure of the test influence. The sporicidal efficiency of the glass beads was remarkable. The result was that bacterial spores and the vegetative forms were progressively destroyed by long and vigorous shaking. The spores died at a rate which corresponded with the unimolecular law for chemical reactions. The rapidity with which spores were destroyed differed with the nature and quantity of the abrasive used, the size of the particles and the species and density of the spore formation. Sporicidal efficiency was progressively increased as the speed of shaking was increased between 330 and 570 revolutions per minute. Foam producing substances, such as broth in which the organisms were cultivated, reduced the germicidal efficiency of this procedure. The resistance of the spores to shaking was not correlated with their thermal resistance. There may be, however, a danger inherent in the practice, as the organisms agitated may not only be killed but their functions may be changed. Brown, of the U. S. Department of Agriculture, has repeatedly obtained invertase from yeast suspensions shaken with sand. Shaking procedures, therefore, may offer promise in the production of endoenzymes of micro-organisms. This procedure will require further trial. It seems to offer a simpler and more economical method for the killing of bacterial spores.

1. Curran, Harold R., and Evans, Fred R.: The Killing of Bacterial Spores in Fluids by Agitation with Small Inert Particles, J. Bact. **43**: 125 (Feb.) 1942.

THE INDEX NUMBER

Last week's issue, THE JOURNAL for April 25, was the Index Number. This was in accordance with an action taken by the Board of Trustees of the American Medical Association providing that hereafter THE JOURNAL shall be published in three volumes each year, covering the respective periods of four months each. This makes three index numbers annually instead of two, as was formerly the case. The content of THE JOURNAL is now so large that binding in two volumes makes a book so bulky that it is difficult to handle under ordinary conditions of work in libraries. Thus volume 118, which ended with the issue for April 25, contained 1,578 pages of reading matter. This incidentally is from two to four times the amount of material made available in any other weekly medical publication.

PLANTS AND MALARIA CONTROL

The control of malaria involves procedures directed against the parasite or its anopheline vector, as well as measures designed to protect the human host from the bite of infected mosquitoes. Aquatic plants are concerned in this malarial triangle, for they provide food and shelter for the larvae of the vector. Plant scientists may thus aid in the control of malaria by determining the relation of each type of plant to anopheline propagation and by devising methods for holding objectionable species in check. An example of this type of work is described by Penfound[1] in a recent report on plant investigations carried on by the Tennessee Valley Authority during the summers of 1937 to 1940. One object of this study was to minimize the breeding of mosquitoes through proper preparation and maintenance of reservoirs. This involves complete clearing to insure reasonable mosquito control after impoundage and strict curbing of objectionable shoreline vegetation. Herbaceous plants in particular present a definite mosquito problem; the most offensive have been delineated and their life histories investigated. Plant control methods at the present time include removal, recurrent cutting and the application of herbicides. As pointed out by Penfound, the study of obnoxious plants is fundamental to adequate maintenance of reservoirs and permits the subsequent undertaking of an intensive campaign to prevent or limit the colonization of certain critical species. The importance of aquatic and semiaquatic vegetation and of flotage in connection with the problem of malaria control in the Southeastern states has been emphasized.[2] The attention being paid to this aspect of the problem by plant scientists constitutes a significant, albeit inconspicuous, service in the interest of public health.

1. Penfound, W. T.: The Relation of Plants to Malaria Control, with Special Reference to Impounded Waters, Pub. Health Rep. **57**: 261 (Feb. 20) 1942.

2. Hinman, E. H.: Biological Effects of Fluctuation of Water Level on Anopheline Breeding, Am. J. Trop. Med. **18**: 483 (Sept.) 1938.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

NEW METHOD FOR IMMEDIATE RECRUITMENT OF MEDICAL OFFICERS

The army has streamlined its method of commissioning medical officers. Five thousand physicians are needed at once. Eleven thousand additional will be needed by Dec. 31, 1942. Army officers' recruiting boards will proceed at once to the office of each state chairman for physicians of the Procurement and Assignment Service, to get in touch with physicians personally and commission them immediately.

INSTRUCTIONS FOR PHYSICIANS WISHING TO ENLIST

1. Return the procurement and assignment enrolment form and questionnaire which reached you last week. If you didn't get one, write immediately to the National Roster of Scientific and Specialized Personnel, 916 G Street N.W., Washington, D. C., for your forms.

2. Contact your state chairman of physicians for Procurement and Assignment Service at once, stating that you want to get into the service. Do this regardless of whether or not you have written to the Washington office of the Procurement and Assignment Service or the Surgeon General or have enrolled on the emergency enrolment form of last December. If you applied for commission more than thirty days ago, tell the state chairman you want to see the recruiting board.

3. The Surgeon General will not commission a physician unless he is certified as available by his state chairman of physicians for the Procurement and Assignment Service.

HOW COMMISSIONS WILL BE SECURED

1. The Surgeon General and the Adjutant General have named teams of two officers and two clerks, who will procure the names of all available physicians who have volunteered from the state chairman for physicians of the Procurement and Assignment Service in your state.

2. These teams will have the authority to make final decisions on the application forms, to procure and make final decisions on the physical findings and to administer the oath of office immediately to those who qualify physically and professionally who are under the age of 45 and who are to be given the rank of lieutenant or captain.

3. These teams have the authority to initiate the applications and physical examinations and forward the papers with their recommendations direct to the Surgeon General for commission for all physicians under the age of 45 who might apparently be qualified for rank above that of captain.

4. These teams will have the authority to initiate the applications and physical examinations and to forward to the Surgeon General direct the papers and their recommendations on all physicians 45 to 54 inclusive. The Surgeon General will make the final decisions and commission those for whom there are vacancies in this age group.

WHAT RANK MAY BE EXPECTED?

In order that all concerned in the procurement of additional medical department officers may give uniform advice to all applicants, the following summary of the policies which broadly govern the recommendations to be made to the Adjutant General are published for your information and guidance:

(*a*) *Basic Considerations.*—(1) Appointments in the Army of the United States (medical department) will be recommended by the Surgeon General to fill authorized position vacancies for which no qualified medical department officers are available. The recommended applicants must possess the special qualifications required for such positions.

(2) Since no training or experience in civil life is analogous to that afforded by active military duty, no initial appointments will be recommended in grades above the lowest for assignment to tactical units.

(3) Position vacancies calling for grades above the lowest will, so far as possible, be filled by the promotion of qualified officers on active duty.

(*b*) *Policy Governing Grades for Various Sections.*—(*1*) Medical Corps: All appointments will be recommended in the grade of first lieutenant with the following exceptions:

(*a*) *Captain: 1.* Eligible applicants between the ages of 37 and 45 will be appointed in the grade of captain by reason of their age and general unclassified medical training and experience.

2. Below the age of 37 the following recognized training and experience will be considered in recommending initial appointments in the grade of captain: certification by an American specialty board; fellowship, American College of Surgeons or American College of Physicians; membership in other nationally recognized qualifying society or association, or the formal hospital training equivalent to that required by an American specialty board or other recognized training appropriate to the assignment for which recommended.

3. Eligible applicants who previously held commissions in the grade of captain in the Medical Corps (Regular Army, National Guard of the United States, Officers' Reserve Corps) may be appointed in that grade provided they have not passed the age of 45.

(*b*) *Major: 1.* Eligible applicants between the ages of 37 and 55 for whom there exist appropriate position vacancies, who are qualified for appointment as captain as outlined in paragraph (1) (*a*) *2* and whose additional training and experience justify initial assignment as chief of service or section or executive officer in a large military hospital or other appropriate position, may be appointed in the grade of major.

2. Applicants previously commissioned as major in the Medical Corps (Regular Army, National Guard of the United States, Officers' Reserve Corps) whose training and experience qualify them for an appropriate assignment may be appointed in the grade of major, provided they have not passed the age of 55.

Rate of Pay

	With Dependents	Without Dependents
Lieutenant Colonel.....	$5,588	$4,676
Major	4,848	3,936
Captain	3,792	3,336
First Lieutenant.....	3,152	2,696
Second Lieutenant.....	2,196	2,196

(*c*) *Lieutenant Colonel and Colonel: 1.* In view of the small number of assignment vacancies in the grades of lieutenant colonel and colonel and the large number of reserve officers of these grades who have not been ordered to active duty, such appointments will be limited to specially qualified applicants required for specific position vacancies which cannot be filled by promotion or by the activation of qualified reserve officers.

NOTE.—*a.* There are in the age group 24-45 more than a sufficient number of eligible qualified physicians to meet medical department requirements. It is on this age group that the Congress, through the Selective Service Act, has imposed the definite obligation of military service. Applicants beyond this age will be considered for appointment only if they possess the special qualifications required for assignment to positions appropriate for the grade of major or above.

b. Appointments for assignment to affiliated medical department units are made under special War Department authorization, and in grades authorized by appropriate tables of organization on recommendation of the authorities of the sponsoring institutions.

HOW SOON MAY ONE EXPECT TO ENTER SERVICE?

Immediate cooperation with the officers' recruiting boards will result in a commission sooner than it could otherwise be obtained. A slightly longer period of time will obtain in the case of those referred to the Surgeon General for decision. In each case a period of fourteen days is granted between the administration of oath of office and the date of reporting for duty. If an officer desires to report before this fourteen day period has expired, he may do so by appropriate statement to the recruiting board. It is advised that no steps be taken to close one's office until after one has taken the oath of office.

SAM F. SEELEY, M.D.,
Executive Officer,
Procurement and Assignment Service.

DIRECTORS OF AFFILIATED UNITS URGED TO ENCOURAGE IMMEDIATE ACTIVE DUTY ON INDIVIDUAL MEMBERS

The office of the Surgeon General of the Army has just sent the following letter to directors of affiliated units:

1. As you are aware, appointments made in the Officers' Reserve Corps or in the Army of the United States for the purpose of assignment to a specific affiliated unit may be terminated on the request of the institution or that of the individual officer. Accordingly, these officers are not considered available for active military duty prior to the activation of the unit without their request and the approval of the institution authorities. This policy has resulted in the immobilization of a very large number of highly trained officers at a time when the shortage of medical officers is assuming serious proportions.

2. The Surgeon General requests that you urge officers assigned to your unit to consider seriously extended active duty at this time, for temporary assignment to named general hospitals or to station hospitals in this country, pending the activation of the unit to which they will then be reassigned.

3. It is not possible to anticipate the rate at which affiliated medical department units will be ordered into active military service. The use of unit personnel until such activation will, however, go far to alleviate the situation now existing in the majority of corps areas; the active duty training received by the individual officer will make him of greater value to the unit when it is called on to function.

4. Requests for extended active duty should be addressed to the Surgeon General and should state the date on which available. Each request should be indorsed by you and should show the date and place at which final type physical examination was made and the positions in the unit for which appointed. Your indorsement will be to the Surgeon General, through the surgeon of the corps area in which the officer resides.

5. The need for officers is acute. Your sincere cooperation is desired.

For the Surgeon General:

FRANCIS M. FITTS,
Lieutenant Colonel, Medical Corps, Assistant.

DISCHARGE RESERVE OFFICERS WHO FAIL TO RECTIFY CORRECTABLE DEFECTS

Any reserve officer, disqualified for active duty with the Army only because of a physical defect which is correctable who fails to correct the defect within a reasonable period of time or states that he does not intend to correct it, will be discharged from the service, the War Department announced on April 17. This policy does not apply to reserve officers who are disqualified because of a physical defect which is not correctable. Such officers may be separated from the service only by resignation. Formerly a reserve officer, declared ineligible for active duty because of disqualifying but correctable defects, continued to hold his commission even though he took no steps to correct the defects and thus fit himself for active duty. Within the past few months all reserve officers have been ordered to take physical examinations to determine their availability for active duty. When correctable physical defects disqualify the officer for active duty a reexamination is held at a set date, based on a reasonable length of time in which the defect might be corrected.

HOW TO ADDRESS MAIL TO SOLDIERS

In keeping with its policy of prompt and certain delivery of soldier mail, the War Department has announced the following instructions designed to enable families and friends of soldiers to send their letters so that they will be delivered promptly:

OUTSIDE CONTINENTAL UNITED STATES

Mail addressed to army personnel serving outside the continental United States should clearly show:

Grade, first name in full, middle initial and last name of person addressed, followed by his army serial number, if known.

Letter or number of the company or other similar organization of which the addressee is a member.

Designation of the regiment or separate battalion, if any, to which the company belongs.

Army postoffice number in care of the appropriate postmaster. The location of the overseas station should not be used.

Name and address of the sender in the upper left corner.

WITHIN CONTINENTAL UNITED STATES

Mail addressed to army personnel within continental United States should show the same information except that the post-office address of the post or camp will be used, preceded in appropriate cases by the APO number if applicable.

Mail addressed to army personnel on maneuvers within the continental United States should show the same information as prescribed for outside continental United States. Prior to beginning of maneuvers, the Post Office Department, with the concurrence of the Army, will designate the postmaster in whose care mail for personnel involved will be addressed.

CORRECT FORMS

The following are examples of correctly addressed envelops:

1st Lieut. Willard J. Roe, Med. Corps U. S. Army,
167th Evacuation Hospital,
APO 801, % Postmaster,
New York, N. Y.

Lieut. (j. g.) Willard J. Roe, Med. Corps, U. S. Navy,
U. S. S. Texas,
% Postmaster,
San Francisco, California.

THE ARMY NEEDS BACTERIOLOGISTS, BIOLOGIC CHEMISTS, SANITARY ENGINEERS AND ENTOMOLOGISTS

The Surgeon General's Office has announced that there are vacancies in the Sanitary Corps of the Army for bacteriologists, biologic chemists, sanitary engineers and entomologists. Applicants desiring to apply for commissions in the Sanitary Corps should write to the Office of the Surgeon General and state their college training and civilian experience in detail.

Applicants must have had at least four years' actual experience, and in the case of bacteriologists this must be in medical diagnostic and public health bacteriology; in the case of biologic chemists, in diagnostic and public health biologic chemistry, including blood, urine, food, water and sewage chemistry, and toxicology; in the case of sanitary engineers, experience must include at least two of the following activities: mosquito control, rodent control, water supplies and sewage treatment. Applicants also must have completed a four years course in college during which special emphasis was laid on studies in the field in which they desire to be commissioned in the Sanitary Corps. The receipt of a higher degree, Master of Science or Doctor of Philosophy, may be substituted for a part of the four years actual experience required. A professional examination is not required. Additional details concerning the qualifications of applicants for commissions in the Sanitary Corps may be obtained on request to the Surgeon General's Office, U. S. Army, Washington, D. C.

RUSH MOBILE MEDICAL UNITS TO BURMA

To protect United Nations troops on the Burma front from malaria and cholera, which are endemic in the spring, the Chinese Red Cross has sent nine mobile medical units to serve as close to the fighting front as possible. Each unit has a surgeon, two assistants, several dressers, eight or more stretcher bearers and two chauffeur-mechanics. The medical supplies are carried in trucks given by the American Red Cross; other equipment was furnished by the American Bureau for Medical Aid to China, an agency of United China Relief. Dr. Robert K. S. Lim of the Chinese Red Cross and Dr. Chi-Teh-Loo, director of the Army Medical Corps, have flown from Chungking to Burma to supervise the inauguration of the antiepidemic program. Already on the Burma front are six ambulances and a surgical team manned by British and American Friends under the leadership of Dr. Robert B. McClure of Canada. A second group of six ambulances is on its way from the headquarters of the Friends' Ambulance Unit.

FUNCTION OF MEDICAL ADVISORY BOARDS

It has been brought to the attention of the National Headquarters of the Selective Service System, Washington, D. C., that, in some corps areas, registrants are being referred back to local boards and medical advisory boards by the examining and induction stations for additional examinations, including laboratory and x-ray tests, to determine their physical qualifications for induction.

The medical advisory board is an element of the Selective Service System. There is no objection to the use by the Army of the specialists on such boards provided the cost is borne by the Army and it is distinctly understood that such services are rendered to and for the Army. In no event should a registrant be referred back to local boards for an additional examination prior to a final action by the examining and induction stations.

A problem arises, not infrequently, at the examining and induction stations, where the registrant declares that he suffers from epilepsy, asthma or other conditions and yet presents no proof other than his bare statement. Because of lack of acquaintance with the registrant, the examiner naturally is uncertain as to the truth or falsity of the statement. If such cases are rejected and returned to the local board, a statement will be made by the examining and induction stations under Remarks on the "Report of Physical Examination and Induction" (form 221), giving the basis for the cause of rejection. If the local board or its examining physician has reason to believe that the registrant has falsified such a statement, it may accumulate evidence to justify its belief and return the registrant at a subsequent date, accompanied by such evidence.

LEWIS B. HERSHEY, Director.

ST. LOUIS PREPARES

More than a hundred thousand persons in St. Louis are in training or have been assigned to duty in the community services of civilian defense and other protective functions, according to the *Star-Times*. By April 9 about three thousand members of the protective organization had already completed their training; however, the national Office of Civilian Defense recently increased their period of training from ten to twenty hours, making it necessary for these members to resume their studies. Of the total number mentioned, 58,871 were enrolled in Red Cross work and the community services. Among the others enrolled were 4,000 in the drivers corps, 450 in the rescue squads, 461 fire watchers, 2,438 auxiliary firemen, 5,350 air raid wardens, 3,160 in the emergency medical services, 213 nurses' aides and 3,705 in the food and housing corps.

BUREAU TO HANDLE PERSONAL PROPERTY LEFT BY UNITS GOING OVERSEAS

An Effects Bureau to handle storage and disposal of personal property left at camps and stations or on trains by military personnel on departure for overseas duty has been established by the War Department. The new bureau has begun operations at the Quartermaster Depot, Kansas City, Mo. Units are sometimes required to leave home stations for duty abroad on short notice. Personnel of these units often leave personal effects behind. All such property, other than automobiles and household effects, will be shipped by station and camp commanders to the Effects Quartermaster at the Kansas City Depot. Station and camp commanders will have all containers or packages opened and examined in the presence of a commissioned officer, and all government property found thereon will be turned over to the appropriate local supply officer. Property of individuals will then be repacked, each in a separate container, for shipment to the depot.

The Effects Bureau is also charged with disposition of effects of personnel who may die overseas. The 112th Article of War provides that the Quartermaster Corps shall transmit the effects of deceased persons to the next of kin or beneficiary. When it is impossible to determine ownership of any property left, the property will be inventoried and shipped to the Depot, where it will be held until ownership can be determined.

REQUEST FOR INCREASE IN RED CROSS BLOOD RESERVE

An additional 350,000 pints of blood from American volunteer donors has been requested by the Army and Navy, Chairman Norman H. Davis of the American Red Cross announced on April 22.

The blood, which will be collected by the Red Cross at its blood donor centers, is to be delivered during the year ending June 30, 1943. A total of 1,280,000 pints now has been requested by the Army and Navy, of which 380,000 is to be delivered by July 1. More than 250,000 pints already has been delivered, and total donations are running around 17,000 a week. On this basis the Red Cross expects to exceed the amount requested for delivery by July.

It should be remembered, Chairman Davis stated, that our ability to make steady deliveries as requested by the Army and Navy depends on the willingness of those living near the eighteen Red Cross blood donor centers to volunteer as blood donors. Only with their continued cooperation shall we be able to supply the blood so badly needed by America's armed forces.

Red Cross blood donor centers are located in New York, Philadelphia, Baltimore, Buffalo, Rochester, N. Y., Indianapolis, Detroit, Pittsburgh, St. Louis, Boston, Cleveland, San Francisco, Milwaukee, Los Angeles, Chicago, Cincinnati, Brooklyn and Washington, D. C. Blood collected by these centers is shipped daily in refrigerated containers to laboratories designated by the Army, where it is processed into dried plasma to be used by the Army and Navy for emergency transfusions. Arrangements also have been made whereby limited amounts of dried plasma are being allocated to the Red Cross by the Army, to be held for use in event of civilian disaster caused by enemy action in this country.

THE GOVERNMENT NEEDS NURSING CONSULTANTS

The U. S. Civil Service Commission, Washington, D. C., announces that, while applications have been accepted for some time for public health nursing consultants in the lower grades, now the commission is seeking also consultants in the three higher grades with salaries of $3,800, $4,600 and $5,600 a year. No age limits have been set.

Positions exist both in the United States and in foreign countries. The war service appointments will be made to extend generally for the duration of the war and not more than six months after. The duties are to plan and carry out nursing or nursing education programs and to act in an advisory capacity to federal agencies or to state, county or municipal organizations. There will be no written test. Applicants must have completed a four year course in a recognized college, with one year's special program of study in public health nursing, must have graduated from an accredited school of nursing, be registered nurses in some state and have had appropriate general public health nursing supervisory experience. Some positions are in the Children's Bureau and in the U. S. Public Health Service. Forms for applying may be obtained at post offices or from the commission in Washington.

DR. BAEHR ADDRESSES DISTRICT SOCIETY

Dr. George Baehr, chief medical officer of the Office of Civilian Defense, addressed the District of Columbia Medical Society on April 1. Dr. Baehr is reported to have said that already three hundred hospitals throughout the country have banks for liquid plasma for emergencies, and that depots for dried blood plasma are being set up in strategic points for civilian use. Dr. Oscar B. Hunter, assistant chief medical officer of the District of Columbia, said that questionnaires had been sent out to medical technicians to determine how many are capable of typing and matching blood for transfusions and that nearly a thousand physicians in the District had already been classified and assigned to duties in cases of emergency.

WANT STUDENT NURSES FOR ST. ELIZABETHS HOSPITAL

The U. S. Civil Service Commission has announced that fifty student nurses will be enrolled for training at St. Elizabeths Hospital School of Nursing, Washington, D. C., about Sept. 15, 1942 and March 15, 1943. Forms for applying may be obtained at post offices throughout the country or from the commission in Washington. Applications must be filed before May 13, 1942. The age limits are from 18 to 30 years, graduation from high school is required, although applications will be accepted from senior high school students who will complete the course not later than Jan. 31, 1943. They must be in good health and capable of performing arduous duties. St. Elizabeths Hospital is a government institution for the treatment of mental disorders. The training period will cover a three year course, including a probationary term of six months. Graduates of the course will be eligible for promotion to higher positions on the nursing staff.

ILLINOIS MEDICAL ADVISORY COMMITTEE

Governor Green of Illinois appointed on March 29 a medical advisory committee to the committee on public health of the Illinois State Council of Defense. The members appointed were Drs. Charles H. Phifer of Chicago, president of the Illinois Medical Society, chairman; Edward H. Weld, Rockford, president-elect of the Illinois Medical Society, vice chairman; Roland R. Cross, director of public health; H. L. Pettitt, Morrison; Arlington Ailes, LaSalle; Robert S. Berghoff, Chicago; Harold M. Camp, Monmouth; E. S. Hamilton, Kankakee; James H. Hutton, Chicago; Raymond W. McNealy, Chicago; Paul L. Schroeder, Chicago; Bertha Shafer, Chicago; Herman M. Soloway, Springfield; Conrad Sommer, Springfield; Walter D. Stevenson, Quincy; Bert W. Caldwell, Chicago; Thomas G. Hull, Ph.D., Chicago, and Rodney Brandon, director state department of public welfare.

MOBILE EMERGENCY UNITS IN WISCONSIN

Public health officials and physicians representing sixteen counties in southern Wisconsin have planned to establish county mobile medical units which will operate out of wartime casualty stations to be established at key points. One of the complete units was shown at a meeting in Madison, April 6. The unit was equipped with bandages, tourniquets, flashlights, medicines, a stove and other equipment for emergency first aid treatment.

TRAINING NURSES' AIDES IN NEW YORK

Eight hundred and ten women had completed training as volunteer nurses' aides in New York City as of April 13, 1,031 were in training and 295 were waiting for class instruction. According to the New York *Times*, a campaign is under way to train 10,000 women as volunteer nurses' aides. Bellevue Hospital, which alone can use more than 300, is one of eighty-four hospitals needing nurses' aides. A survey conducted at Bellevue by the director of volunteer service, Miss Lois Mills, disclosed that women from 30 to 50 years of age are best equipped to fill these posts. In the campaign to obtain nurses' aides, 400 women were interviewed and accepted for service the second week in April.

VIRGINIA ORGANIZES EVACUATION HOSPITAL

Arrangements are practically complete for Evacuation Hospital No. 8, being organized by the University of Virginia Department of Medicine, Charlottesville, under the direction of Dr. Staige D. Blackford of the faculty of medicine. A unit is being organized for foreign service, according to the Richmond *Times Dispatch*. In the first world war the University of Virginia Unit, Base Hospital No. 41, served in France.

ORGANIZATION SECTION

THE ATLANTIC CITY SESSION

AMERICAN MEDICAL ASSOCIATION, NINETY-THIRD ANNUAL SESSION

ATLANTIC CITY, JUNE 8-12, 1942

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The ninety-third annual session of the American Medical Association will be held in Atlantic City, June 8-12, 1942.

The House of Delegates will convene at 10 a. m. Monday, June 8. In the House the representation of the various constituent associations for 1941, 1942 and 1943 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	5
Arkansas	2	New Mexico	1
California	8	New York	19
Colorado	2	North Carolina	3
Connecticut	2	North Dakota	1
Delaware	1	Ohio	7
District of Columbia	1	Oklahoma	2
Florida	2	Oregon	1
Georgia	3	Pennsylvania	11
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	2
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	2
Maryland	2	Washington	2
Massachusetts	6	West Virginia	2
Michigan	5	Wisconsin	3
Minnesota	4	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Hawaii	1
Montana	1	Isthmian Canal Zone	1
Nebraska	2	Philippine Islands	2
Nevada	1	Puerto Rico	1

The sixteen scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting, to be held at 8 p. m. Tuesday, June 9. The sections will meet Wednesday, Thursday and Friday, June 10, 11 and 12, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON

Surgery, General and Abdominal.
Ophthalmology.
Pediatrics.
Experimental Medicine and Therapeutics.
Nervous and Mental Diseases.
Dermatology and Syphilology.
Gastro-Enterology and Proctology.
Radiology.
Miscellaneous Business: Sessions on General Practice. Session on Legal Medicine.

CONVENING AT 2 P. M., THE SECTIONS ON

Practice of Medicine.
Obstetrics and Gynecology.
Laryngology, Otology and Rhinology.
Pathology and Physiology.
Preventive and Industrial Medicine and Public Health.
Urology.
Orthopedic Surgery.
Anesthesiology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m. Monday, Tuesday, Wednesday and Thursday, June 8, 9, 10 and 11, and from 8:30 a. m. to 12 noon Friday, June 12.

FRANK H. LAHEY, President.
H. H. SHOULDERS, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included:

STATE DELEGATES

ALABAMA
A. A. Walker, Birmingham.
Lloyd Noland, Fairfield.

ARIZONA
Harold W. Kohl, Tucson.

ARKANSAS
William R. Brooksher, Fort Smith.

CALIFORNIA
Edward N. Ewer, Oakland.
Edward M. Pallette Sr., Los Angeles.
Robert A. Peers, Colfax.
William R. Molony Sr., Los Angeles.
Lyell C. Kinney, San Diego.
Harry H. Wilson, Los Angeles.
Henry S. Rogers, Petaluma.

COLORADO
Walter W. King, Denver.
John Andrew, Longmont.

CONNECTICUT
James R. Miller, Hartford.
George Blumer, New Haven.

DELAWARE
Laurence L. Fitchett, Milford.

DISTRICT OF COLUMBIA
Henry C. Macatee, Washington.

FLORIDA
Edward Jelks, Jacksonville.
Meredith Mallory, Orlando.

GEORGIA
Marion C. Pruitt, Atlanta.
William A. Mulherin, Augusta.
Olin H. Weaver, Macon.

IDAHO
Edward N. Roberts, Pocatello.

ILLINOIS
Robert H. Hayes, Chicago.
Lee O. Frech, Decatur.
C. E. Wilkinson, Danville.
W. E. Kittler, Rochelle.

INDIANA
H. G. Hamer, Indianapolis.
George R. Dillinger, French Lick.
Don F. Cameron, Fort Wayne.
F. S. Crockett, La Fayette.

IOWA
Ransom D. Bernard, Clarion.

KANSAS
Forrest L. Loveland, Topeka.
J. F. Hassig, Kansas City.

KENTUCKY
J. Duffy Hancock, Louisville.
Arthur T. McCormack, Louisville.
Virgil E. Simpson, Louisville.

LOUISIANA
Leon J. Menville, New Orleans.
James Q. Graves, Monroe.

MAINE
Thomas A. Foster, Portland.

MARYLAND
Alfred T. Gundry, Baltimore.

MASSACHUSETTS
John M. Birnie, Springfield.
Richard H. Miller, Boston.
David D. Scannell, Boston.
Dwight O'Hara, Boston.
Charles E. Mongan, Somerville.
Walter G. Phippen, Salem.

MICHIGAN
Henry A. Luce, Detroit.
T. K. Gruber, Eloise.
Claude R. Keyport, Grayling.
Leo G. Christian, Lansing.
Frank E. Reeder, Flint.

MINNESOTA
A. W. Adson, Rochester.
James M. Hayes, Minneapolis.
W. A. Coventry, Duluth.
Francis J. Savage, St. Paul.

MISSISSIPPI
J. P. Wall, Jackson.

MISSOURI
Robert E. Schlueter, St. Louis.
Rexford L. Diveley, Kansas City.

MONTANA
J. H. Irwin, Great Falls.

NEBRASKA
Karl S. J. Hohlen, Lincoln.
Roy W. Fouts, Omaha.

NEVADA
Horace J. Brown, Reno.

NEW HAMPSHIRE
Deering G. Smith, Nashua.

NEW JERSEY
Hilton S. Read, Atlantic City.
Wells P. Eagleton, Newark.
Thomas K. Lewis,* Camden.
Andrew F. McBride, Paterson.
Lucius F. Donohoe, Bayonne.

NEW MEXICO
H. A. Miller, Clovis.

NEW YORK
Thomas M. Brennan, Brooklyn.
Edward R. Cunniffe, New York.
Terry M. Townsend, New York.
Edward C. Podvin, New York.
Floyd S. Winslow, Rochester.
William D. Johnson, Batavia.
Harry C. Guess, Buffalo.
Emily D. Barringer, New York.
William A. Groat, Syracuse.
James R. Reuling Jr., Bayside.
Louis H. Bauer, Hempstead.
James M. Flynn, Rochester.
George W. Kosmak, New York.
Thomas A. McGoldrick, Brooklyn.
Samuel J. Kopetzky, New York.
John J. Masterson, Brooklyn.
John T. Donovan, Buffalo.
Frederic E. Sondern, New York.
Walter W. Mott, White Plains.

NORTH CAROLINA
Ross S. McElwee, Statesville.

NORTH DAKOTA
A. P. Nachtwey, Dickinson.

OHIO
Barney J. Hein, Toledo.
Parke G. Smith, Cincinnati.
William M. Skipp, Youngstown.

OKLAHOMA
A. S. Risser, Blackwell.

OREGON
John H. Fitzgibbon, Portland.

PENNSYLVANIA
Walter F. Donaldson, Pittsburgh.
Francis F. Borzell, Philadelphia.
James H. Corwin, Washington.
Leonard G. Redding, Scranton.
Charles H. Henninger, Pittsburgh.
Charles G. Strickland, Erie.
Robert L. Anderson, Pittsburgh.
J. Newton Hunsberger, Norristown.
William L. Estes Jr., Bethlehem.
Joseph Scattergood Jr., West Chester.
Alexander H. Steward, Harrisburg.

SOUTH CAROLINA
T. A. Pitts, Columbia.

SOUTH DAKOTA
J. R. Westaby, Madison.

TENNESSEE
H. B. Everett, Memphis.

TEXAS
Holman Taylor, Fort Worth.
S. E. Thompson, Kerrville.

UTAH
John Z. Brown, Salt Lake City.

VERMONT
Benjamin F. Cook, Rutland.

VIRGINIA
Walter B. Martin, Norfolk.
Carrington Williams, Richmond.

WASHINGTON
R. L. Zech, Seattle.
John H. O'Shea, Spokane.

WEST VIRGINIA
Walter E. Vest, Huntington.
Ivan Fawcett, Wheeling.

WISCONSIN
Stephen E. Gavin, Fond du Lac.
James C. Sargent, Milwaukee.
Joseph F. Smith, Wausau.

WYOMING
George P. Johnston, Cheyenne.

HAWAII
F. J. Pinkerton, Honolulu.

ISTHMIAN CANAL ZONE
Lewis B. Bates, Ancon.

PUERTO RICO
Ramon M. Suarez, Santurce.

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

PRACTICE OF MEDICINE
J. E. Paullin, Atlanta, Ga.

SURGERY, GENERAL AND ABDOMINAL
Henry W. Cave, New York.

OBSTETRICS AND GYNECOLOGY
Jean Paul Pratt, Detroit.

OPHTHALMOLOGY
Arthur J. Bedell, Albany, N. Y.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Burt R. Shurly, Detroit.

PEDIATRICS
William Weston, Columbia, S. C.

EXPERIMENTAL MEDICINE AND THERAPEUTICS
O. P. J. Falk, St. Louis.

PATHOLOGY AND PHYSIOLOGY
L. W. Larson, Bismarck, N. D.

NERVOUS AND MENTAL DISEASES
Henry R. Viets, Boston.

DERMATOLOGY AND SYPHILOLOGY
Clyde L. Cummer, Cleveland.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
Stanley H. Osborn, Hartford, Conn.

UROLOGY
H. C. Bumpus, Pasadena, Calif.

ORTHOPEDIC SURGERY
J. Archer O'Reilly, St. Louis.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis A. Buie, Rochester, Minn.

RADIOLOGY
E. H. Skinner, Kansas City, Mo.

ANESTHESIOLOGY
H. S. Ruth, Merion Station, Pa.

UNITED STATES ARMY
Larry B. McAfee, Washington, D. C.

UNITED STATES NAVY
Harold W. Smith, Washington, D. C.

UNITED STATES PUBLIC HEALTH SERVICE
Warren F. Draper, Washington, D. C.

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PRESIDENT-ELECT—Fred W. Rankin, Lexington, Ky.

VICE PRESIDENT—Charles A. Dukes,* Oakland, Calif.

SECRETARY AND GENERAL MANAGER—Olin West, Chicago.

TREASURER—Herman L. Kretschmer, Chicago.

SPEAKER, HOUSE OF DELEGATES—H. H. Shoulders, Nashville, Tenn.

VICE SPEAKER, HOUSE OF DELEGATES—R. W. Fouts, Omaha.

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JUDICIAL COUNCIL—Holman Taylor, Fort Worth, Texas, 1942; John H. O'Shea, Spokane, Wash., 1943; Edward R. Cunniffe, New York, 1944; George Edward Follansbee, Chairman, Cleveland, 1945; Walter F. Donaldson, Pittsburgh, 1946; Olin West, Secretary, ex officio, Chicago.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS—Reginald Fitz, Boston, 1942; Russell L. Haden, Cleveland, 1943; Charles Gordon Heyd, New York, 1944; H. G. Weiskotten, Chicago, 1945, Secretary; Ray Lyman Wilbur, Chairman, Stanford University, Calif., 1946; John H. Musser, New Orleans, 1947; Harvey B. Stone, Baltimore, 1948.

COUNCIL ON SCIENTIFIC ASSEMBLY—Clyde L. Cummer, Cleveland, 1942; James E. Paullin, Chairman, Atlanta, Ga., 1943; J. Gurney Taylor, Milwaukee, 1944; A. A. Walker, Birmingham, Ala., 1945; Frederick A. Coller, Ann Arbor, Mich., 1946, and, ex officio, the President-Elect, the Editor and the Secretary of the Association.

COUNCIL ON PHARMACY AND CHEMISTRY—R. A. Hatcher, New York, 1943; H. N. Cole, Cleveland, 1943; Stuart Mudd, Philadelphia, 1943; J. Howard Brown, Baltimore, 1944; James P. Leake, Washington, D. C., 1944; David P. Barr, New York, 1945; Morris Fishbein, Chicago, 1945; G. W. McCoy, New Orleans, 1945; Perrin H. Long, Baltimore, 1945; Elmer M. Nelson, Washington, D. C., 1945; Torald Sollmann, Chairman, Cleveland, 1946; W. C. Rose, Urbana, Ill., 1946; E. L. Sevringhaus, Madison, Wis., 1946; E. M. K. Geiling, Chicago, 1947; W. W. Palmer, New York, 1947; S. W. Clausen, Rochester, N. Y., 1947; Austin E. Smith, Acting Secretary, Chicago.

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COMMITTEE ON SCIENTIFIC EXHIBIT—Roger I. Lee, Chairman, Boston; E. L. Henderson, Louisville, Ky.; Ralph A. Fenton, Portland, Ore.; Thomas G. Hull, Director, Chicago. Advisory Committee—D. Chester Brown, Danbury, Conn.; George Blumer, New Haven, Conn.; Paul J. Hanzlik, San Francisco; Ludvig Hektoen, Chicago; Urban Maes, New Orleans; Eben J. Carey, Milwaukee; James P. Leake, Washington, D. C.

BUREAU OF LEGAL MEDICINE AND LEGISLATION—J. W. Holloway Jr., Director, Chicago.

BUREAU OF HEALTH EDUCATION—W. W. Bauer, Director, Chicago.

BUREAU OF INVESTIGATION—Paul C. Barton, Director, Chicago.

BUREAU OF MEDICAL ECONOMICS—R. G. Leland, Director, Chicago.

LABORATORY—Albert E. Sidwell Jr., Director, Chicago.

LIBRARY—Marjorie Hutchins Moore, Librarian, Chicago.

* Deceased.

ATLANTIC CITY

INFORMATION ABOUT THE CONVENTION PLANS AND THE CONVENTION CITY

The thousands of doctors and their wives who have attended previous sessions in Atlantic City need little encouragement to make them want to visit Atlantic City again.

The city's convention facilities are the best in the country. Past performances show that Atlantic City presents the finest convention facilities both from business and from entertainment points of view.

THE JOURNAL has carried many previous stories telling of the resort's natural attractions and its man made diversions. With the country at war this year it is necessary to throw a somewhat different light on the picture. Here are answers to some of the questions which have probably come to mind as plans have been made to attend the session.

If any of the thousands who are making arrangements to go to Atlantic City expect to find war's excitements they will be disappointed. There is plenty of excitement but not of the war variety. The only evidence of the military is in the uniforms of the men with their wives on week end furloughs.

A close inspection of the beach for evidence of barbed wire entanglements, guns or trenches reveals only a wide, smooth strand, 8 miles long, on which sun seekers rest in the beach chairs or on the beach itself. There will also be found the usual bathers out to get a coat of tan.

The Boardwalk lights are somewhat dimmer. Like other cities, Atlantic City has a well organized civilian defense army.

Atlantic City would like to be able to boast that it has a host of defense industries turning out war materials for the armed forces, but there just aren't any there. The resort makes its contribution by providing health and entertainment for those who are closely alined with the all out effort.

There are no priorities on sunshine or recreation and, even if there were, this greatest of all resorts is well supplied. Consequently, Atlantic City, its hotels, large and small, its many theaters, its auditoriums, its Boardwalk, its beach, its ocean, its golf courses, its cottages and rooming houses and all its hundred and one other features are combining to make a contribution toward national defense. They've signed a pledge to do everything possible to make an estimated fifteen million visitors hale Americans during 1942.

The great Municipal Convention Hall, world's largest, which in the past has provided such a fine setting for the convention sessions, will again be the center of activities. The many exhibits will be seen in the huge main arena and in the lower hall; the larger meetings will be held in the ball room seating five thousand three hundred, with many committee rooms set aside for smaller meetings.

Fine highways lead into the resort from Philadelphia and New York for those who plan to motor in, while fast trains and busses are available for others. Transportation is no problem once one arrives in Atlantic City as all the hotels are within walking distance of the convention hall. Those who prefer to ride will find the taxi rates reasonable, with jitneys running along Pacific Avenue and trolley cars on Atlantic Avenue, the city's two principal streets.

There are also some two thousand rolling chairs ready to carry sightseers along the Boardwalk at a leisurely pace. Special rates will be granted those wearing convention badges. This is just one of the many things that are being done to make the visit to Atlantic City more enjoyable. Those who go there for the first time will be glad to add their voices to those of the others in singing the praises of the famous seashore metropolis as the nation's number 1 convention city.

SOMEWHAT HISTORICAL

Atlantic City, ninety-third meeting place of the American Medical Association, is situated on Absecon Island between Great Egg Harbor and Absecon inlets on the New Jersey coast.

The name Absecon is a corruption of the real Algonquin Indian name Absegami, which designated the bay which lies between Atlantic City and the mainland. Abse is the common Algonquin word for "small" or "little." Kitchi, in the Indian tongue, means "great" and Lake Superior, for instance, was known to the Indians as Kitchi-gami—the "great water." The true Indian etymology of Absecon Island therefore is Absegami, meaning "little water," and refers to the smooth salt water lake inside the sand bar on which Atlantic City is built. Present day Absecon is merely a more euphonius corruption of the original Indian "little water"—Absegami.

THE CONVENTION HALL

Modern Atlantic City is America's greatest resort investment. It is also the prototype convention city. Beautiful hotels, bizarre in color and form, stand at the very edge of the surf, their loftiness sharply accented against the clear, smokeless sky. The Atlantic City skyline is one of America's dramatic architectural spectacles as it rises majestically from the ocean's edge. To its distinction as the world's greatest health and pleasure resort, Atlantic City has also added the honor of possessing the largest convention hall.

The Atlantic City convention hall is literally colossal in its proportions, covering an area of 7 acres. It is 350 feet wide by 650 feet deep, and the main auditorium has a seating capacity of forty-one thousand. The floor of the main auditorium is 168,000 square feet in area, while an additional space of 96,000 square feet is provided on the ground floor. Adjacent to the main auditorium and fronting the Boardwalk is another large hall with a seating capacity of five thousand three hundred. The main auditorium houses the world's largest pipe organ, and some idea of the immensity of this auditorium may be gained from the fact that a fourteen story building could be erected within its walls. In season, football is played regularly in this mammoth hall on a regulation playing field.

Physicians who attended the 1935 and 1937 Atlantic City sessions of the Association will recall the convenient arrangement of all meetings and exhibits in Convention Hall. This year, however, the facilities of this splendid building will be used to even better advantage. Three large new meeting rooms, each well lighted and ventilated, will make it possible for all of the nine sections to meet simultaneously in Convention Hall. In addition, a much enlarged area will this year be occupied exclusively by the Scientific Exhibit. The Technical Exhibit will be located on the arena floor, and all meetings, including the general sessions, will be held in rooms immediately adjacent to the Scientific and Technical exhibits.

In view of prevailing conditions, it is likely that many doctors will avail themselves of the opportunity to combine a family holiday with their attendance at the annual meeting. Atlantic City's hotels are comfortable and from every standpoint are recognized as among the best. Hotel rooms are large, and most of them overlook the sea. Lobbies and sun decks are spacious and colorful. All hotels are convenient to Convention Hall.

DIVERSION

Apart from the many reunions and other social gatherings that are a delightful perennial feature of every A. M. A. convention, Atlantic City itself offers a variety of wholesome diversion. The rolling chair, for instance, is indigenous to the Boardwalk. Patrons of this unique form of transportation experience a decided "lift" as they move noiselessly along the miles of surf girded walk. The deep sea net haul and the amusement piers are also distinctly Atlantic City. But the quality that "types" Atlantic City and makes it attractive to fifteen million visitors each year is the all pervading atmosphere of seaside serenity and calm that prevails on the Boardwalk and in the hotels, theaters and restaurants. This desirable quality is achieved largely through the complete absence of automobiles on the Boardwalk—no traffic noises or gasoline fumes. Likewise there is no smoke nor dirt—there are no industries.

PANORAMA OF THE BOARDWALK IN ATLANTIC CITY, SHOWING BOARDWALK HOTELS

Certain facts about Atlantic City will be of special interest to the physician. Its water supply, for instance, comes mainly from artesian wells. In fact, each large hotel has its own wells supplying pure cold fresh water drawn from a stream 1,200 feet below the salty sea.

Another fact of more than passing interest is Atlantic City's geographic location. It is below the Mason and Dixon line and, although it fronts on the Atlantic Ocean, it faces almost directly south. Its main axis, the Boardwalk, parallels the ocean yet runs almost due east and west. The prevailing breeze is southwest—clean, fresh and ozone laden from the sea.

Atlantic City is different. Although many have tried to define this difference, Atlantic City must be experienced to be fully appreciated.

REGISTRATION

The Bureau of Registration will be located at the north end of Technical Exhibition Hall in Convention Hall, Boardwalk between Georgia and Mississippi avenues. Members of the Subcommittee on Registration of the Local Committee on Arrangements will be on hand to assist those who desire to register. A branch postoffice in charge of government postoffice officials will be available for visitors, and an information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL and paid their Fellowship dues for the current year. Fellowship dues and subscription to THE JOURNAL are included in the one annual payment of $8, which is the regular subscription price of THE JOURNAL. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1942 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Members in Good Standing Eligible to Apply for Fellowship in the Association

Members in good standing in the American Medical Association are those members of component county medical societies and of constituent state and territorial medical associations whose names are officially reported for enrolment to the Secretary of the American Medical Association by the secretaries of the constituent medical associations. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to Atlantic City so that registration can be more easily and more promptly effected.

Application forms may be had on request.

Those subscribers to THE JOURNAL who have not received pocket cards for 1942 should write to the American Medical Association in order to obtain application blanks and information as to further requirements.

Register Early

Fellows living in Atlantic City, as well as all other Fellows who are in Atlantic City on Monday and Tuesday, should register as early as possible.

The names and local addresses of those who register will be included in the issue of the *Daily Bulletin* appearing the next day, and this will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau.

Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card and sign the application on the back. These cards will be found on the tables.

Entries on the registration card should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*, which appears on Tuesday, Wednesday, Thursday and Friday mornings during the week of the session.

Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with the pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it and supply the Fellow with a badge, a copy of the official program and other printed matter of interest to those attending the annual session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 10. Any applications that are received later than May 10 will be given prompt attention, but the Fellowship pocket card may

THE CONVENTION AUDITORIUM IS LOCATED AT A CONVENIENT DISTANCE FROM MOST OF THE LARGE HOTELS

not reach the applicant in time for him to register at the Atlantic City session.

It will be possible for members of the organization to qualify as Fellows at Atlantic City. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and to sign the formal application that is printed on the reverse side of the card. It is suggested that those members who apply for Fellowship at Atlantic City bring with them their state membership cards for the year 1942. The state membership card should be presented along with the filled in *blue* registration card at the window in the booth marked "Applicants for Fellowship and Invited Guests."

As already stated, registration can be effected more easily and more promptly if members will qualify as Fellows before leaving home.

Registration for General Officers and Delegates at Hotel Traymore

General Officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly outside the American Room of the Hotel Traymore. This arrangement is made for the convenience of the members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the American Room of the Hotel Traymore. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Registration of delegates for the Scientific Assembly will begin at 8 o'clock Monday morning, June 8, and delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

TRANSPORTATION

Railroad Rates to Atlantic City

Because of the reduction in one way fares effective June 1, 1936, the use of convention fares has been discontinued in the territories of railway passenger associations.

In the territory of the Central Passenger Association and in that of the Trunk Line Association, the fares vary for travel in sleeping or parlor cars and in coaches. The suggestion is offered that members of the Association traveling to Atlantic City from the territories of the Central Passenger and Trunk Line associations consult their ticket agents a week or so in advance of the time at which they expect to start to Atlantic City for the exact rates that will be in effect then, not only for individuals but also for parties that may be traveling together.

In the territory of the Southern Passenger Association, low round trip fares are in effect to Atlantic City for travel in sleeping or parlor cars on payment of usual charges for space occupied with return limit of thirty days in addition to date of sale. If a longer limit than thirty days is desired, tickets with six months limit may be obtained at reduced fares on a slightly higher basis. Moreover, reduced fares are in effect on a slightly lower basis from all points in the Southern Passenger Association territory to Atlantic City for tickets which are good for transportaion in coaches and which bear a limit of fifteen days in addition to the date of sale. Local ticket agents will be able to furnish more complete information at the time tickets are purchased.

In the territory of the Southwestern Passenger Association, daily round trip fares are in effect to Atlantic City on the basis of fare and one half of the one way fare to its gateways added to the reduced fares of Southern Passenger, Central Passenger and Trunk Line associations, tickets at these fares offering limit of sixty days in addition to date of sale. Six month limit tickets may also be obtained at slightly higher fares, the usual charges being made for space occupied in sleeping and parlor cars. Lower fares are available to those desiring to travel in coaches. The suggestion is offered that members of the Association traveling from points in the territory of the Southwestern Passenger Association consult their local ticket agents for details of arrangements that apply from starting points.

In the territory of the Trans-Continental and Western Passenger associations low round trip fares will be in effect daily for travel in sleeping and parlor cars on the payment of the usual charges for the space which is occupied. In a part of these territories low intermediate class fares, good for transportation in tourist sleeping cars, will also be available on the payment of charges for the space occupied.

In the territory of the Canadian Passenger Association, in addition to one way tickets, round trip tickets may be purchased which are computed on the basis of a rate 10 per cent less than double the rate for one way fares, which bear a limit of six months from the date of sale and which are available for stop over privileges. Moreover, summer or other reduced fares are in effect during certain parts of the year, details of which are available on application to any railway agent.

For information regarding specific fares and the most advantageous arrangements from starting points, all members who expect to attend the annual session in Atlantic City are urged to consult their local ticket agents.

Air Travel

Your nearest Airline Ticket Office, Travel Bureau or Hotel Transportation Desk will gladly give information regarding air travel and arrange your itinerary.

Local Transportation

Trolley cars operate the entire length of the Island on Atlantic Avenue, which parallels the Boardwalk, and the fare is 7 cents.

Jitney automobiles operate the entire length of Pacific Avenue, which parallels the Boardwalk, and the fare is 10 cents.

Taxicabs operate at the rate of 50 cents for one person, 75 cents for two persons and 10 cents for each additional person.

Persons with convention badges will be entitled to a special rate for the rolling chairs on the Boardwalk. Between the Seaside Hotel and Convention Hall or between the Chelsea Hotel and Convention Hall in either direction, the charge will be 50 cents for one, two or three passengers. This rate is for a direct trip to or from the Convention Hall only.

It is suggested that prospective attendants to the Atlantic City session secure transportation prior to May 15.

ATLANTIC CITY HOTELS AND MAP

A list of Atlantic City hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 8-12. Dr. V. Earl Johnson is chairman of the Subcommittee on Hotels of the Local Committee on Arrangements and may be addressed at 16 Central Pier, Atlantic City, N. J. The advertising announcement and a coupon to be used for making reservations appear on advertising page 108 of this issue.

Since reservations are cleared through the subcommittee on hotels, it will greatly expedite matters if requests for reservations are addressed directly to Dr. Johnson, who, as stated, may be reached at 16 Central Pier, Atlantic City, N. J.

Schedule of Rates

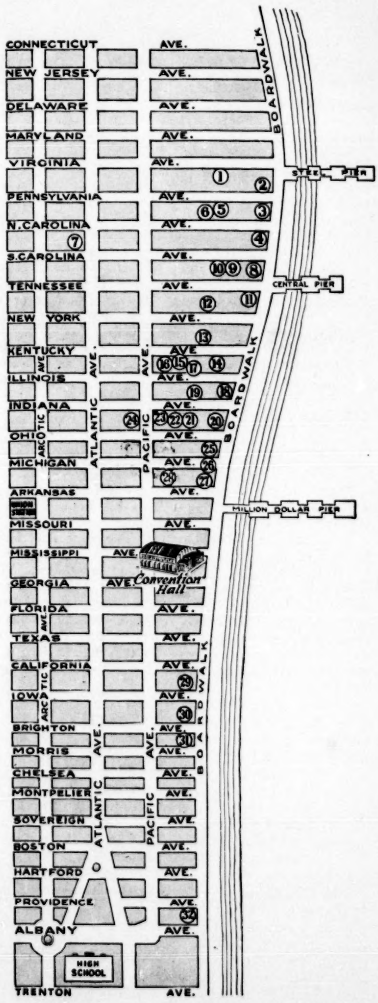
All Rooms with Bath

BOARDWALK HOTELS

Number on Map		European Plan For 1 Person	For 2 Persons
30	AMBASSADOR Bdwk. at Brighton Ave.	$3.00-$6.00	$5.00-$10.00
19	BRIGHTON Bdwk. at Indiana Ave.	3.00- 5.00	5.00- 8.00
4-3	CHALFONTE-HADDON HALL Bdwk. at N. Carolina Ave.	4.00- 8.00	6.00- 12.00
31	CHELSEA Bdwk. at Morris Ave.	3.00- 6.00	5.00- 10.00
20	CLARIDGE Bdwk. at Park Pl.	4.00- 9.00	6.00- 12.00
26	DENNIS Bdwk. at Michigan Ave.	3.50- 6.00	6.00- 10.00
11	KNICKERBOCKER Bdwk. at Tennessee Ave.	3.00- 5.00	5.00- 7.00
25	MARLBOROUGH-BLENHEIM Bdwk. at Ohio Ave.	3.50- 6.00	6.00- 11.00
8	NEW BELMONT Bdwk. at Ocean Ave.	2.50- 3.00	4.00- 7.00
32	PRESIDENT Bdwk. at Albany Ave.	3.00- 5.00	5.50- 8.00
29	RITZ-CARLTON Bdwk. at Iowa Ave.	3.00- 5.00	5.00- 10.00
2	SEASIDE Bdwk. at Pennsylvania Ave.	3.00- 4.00	5.00- 7.00
27	SHELBURNE Bdwk. at Michigan Ave.	4.00-10.00	6.00- 12.00
18	TRAYMORE Bdwk. at Illinois Ave.	3.50- 7.00	6.00- 10.00

AVENUE HOTELS

28	ARLINGTON 115 S. Michigan Ave.	2.50- 3.50	4.00- 5.00
16	BYRON 121 S. Kentucky Ave.		4.50- 6.00
5	COLTON MANOR 110 S. Pennsylvania Ave.	3.00- 5.00	5.00- 9.00
23	CRILLON Pacific and Indiana Aves.		5.00- 6.00
24	EASTBOURNE 1807 Pacific Ave.		4.50- 6.00
12	FLANDERS 127 St. James Place	3.00- 4.00	5.00
21	GLASLYN-CHATHAM Park Place		5.00
14	JEFFERSON 136 S. Kentucky Ave.	3.00- 4.00	5.00- 7.00
15	KENTUCKY 126 S. Kentucky Ave.	2.50	4.00
6	LAFAYETTE 109 S. No. Carolina Ave.	3.00- 4.00	5.00- 7.00
17	MADISON 123 S. Illinois Ave.	3.00- 5.00	5.00- 8.00
13	MONTICELLO 131 S. Kentucky Ave.		5.00- 6.00
1	MORTON 150 S. Virginia Ave.	3.00- 4.00	5.00- 7.00
7	PENN-ATLANTIC 1219 Bacharach Blvd.	2.50- 3.00	4.00- 6.00
10	PRINCESS 144 S. So. Carolina Ave.	2.50	4.00
22	RUNNYMEDE Park Place	2.50- 4.00	4.00- 7.00
9	SENATOR 166 S. So. Carolina Ave.	3.00- 4.00	5.00- 7.00



MEETING PLACES

HOUSE OF DELEGATES: American Room, Hotel Traymore, Boardwalk at Illinois Avenue.

OPENING GENERAL MEETING: Ball Room, Second Floor, Convention Hall.

GENERAL SCIENTIFIC MEETINGS: Ball Room, Second Floor, Convention Hall.

GENERAL HEADQUARTERS, SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, TECHNICAL EXHIBITS, INFORMATION BUREAU AND BRANCH POSTOFFICE: Convention Hall.

SECTIONS OF SCIENTIFIC ASSEMBLY

PRACTICE OF MEDICINE: Ball Room, Second Floor, Convention Hall.

SURGERY, GENERAL AND ABDOMINAL: Section Room C, First Floor, Convention Hall.

OBSTETRICS AND GYNECOLOGY: Section Room C, First Floor, Convention Hall.

OPHTHALMOLOGY: Section Room G, First Floor, Convention Hall.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Section Room G, First Floor, Convention Hall.

PEDIATRICS: Ball Room, Second Floor, Convention Hall.

EXPERIMENTAL MEDICINE AND THERAPEUTICS: Section Room E, First Floor, Convention Hall.

PATHOLOGY AND PHYSIOLOGY: Section Room E, First Floor, Convention Hall.

NERVOUS AND MENTAL DISEASES: Section Room D, First Floor, Convention Hall.

DERMATOLOGY AND SYPHILOLOGY: Section Room 12, Third Floor, Convention Hall.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: Section Room B, First Floor, Convention Hall.

UROLOGY: Section Room 12, Third Floor, Convention Hall.

ORTHOPEDIC SURGERY: Section Room D, First Floor, Convention Hall.

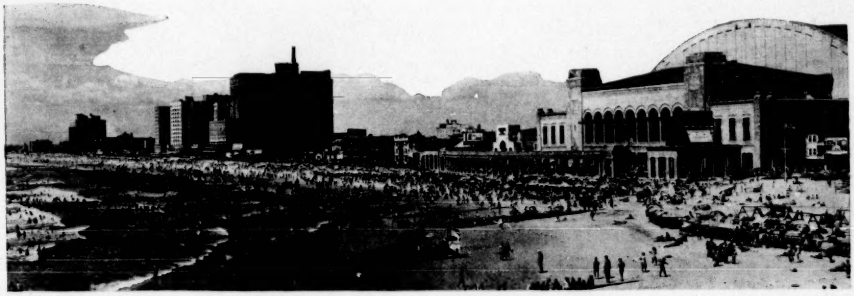
GASTRO-ENTEROLOGY AND PROCTOLOGY: Section Room B, First Floor, Wednesday and Thursday, June 10 and 11; Section Room F, First Floor, Friday, June 12, Convention Hall.

RADIOLOGY: Section Room A, First Floor, Convention Hall.

ANESTHESIOLOGY: Section Room A, First Floor, Convention Hall.

MISCELLANEOUS TOPICS: Sessions on General Practice, Section Room F, First Floor, Convention Hall; Session on Legal Medicine, Section Room B, First Floor, Convention Hall.

Convention Hall is located on the Boardwalk between Georgia and Mississippi avenues.



BOARD WALK HOTELS AND THE CONVENTION AUDITORIUM

LOCAL COMMITTEE ON ARRANGEMENTS

WILLIAM JOHN CARRINGTON, Chairman
CLARENCE LADELLE ANDREWS, Vice Chairman
HAROLD STERN DAVIDSON, Secretary
JAMES HENRY MASON III, Treasurer

Advisory Committee

Hilton Shreve Read, Chairman.
Thomas Krapfel Lewis.
Elias Joseph Marsh.
Ralph King Hollinshed.
Joseph Francis Londrigan.

Subcommittees

Subcommittee on Sections and Section Work: John Shepherd Irwin, Chairman.

Practice of Medicine: David Ward Scanlan and Theophilus Henry Boysen.

Surgery, General and Abdominal: Harry Subin and Roscoe Rostin White.

Obstetrics and Gynecology: George Alec Poland and John Carlisle Brown.

Ophthalmology: Halvor Larson Harley and George Charles Schwarzkopf.

Laryngology, Otology and Rhinology: Charles David Sinkinson and Simon Eugene Dalton.

Pediatrics: Walter Blair Stewart and Emanuel Harrison Nickman.

Experimental Medicine and Therapeutics: Matthew Molitch and Lawrence Addison Wilson.

Pathology and Physiology: Robert Brannan Durham and Isaac Shenfeld.

Nervous and Mental Diseases: William Cole Davis and Samuel Gorson.

Dermatology and Syphilology: William O. Roop and Herman Kline.

Preventive and Industrial Medicine and Public Health: Samuel Leon Salasin and Robert Martin Grier.

Urology: Charles Henry de Turck Shivers and Leland Stanford Madden.

Orthopedic Surgery: Richard Conrad Bew and Edward Zell Holt.

Gastro-Enterology and Proctology: Homer Isaac Silvers and Mahlon Browne Holoman.

Radiology: Charles Butcher Kaighn and Robert Aloysius Bradley.

LOCAL COMMITTEE ON ARRANGEMENTS: READING FROM LEFT TO RIGHT, FRONT ROW, SEATED: DR. HAROLD S. DAVIDSON, DR. DAVID B. ALLMAN, MRS. DAVID B. ALLMAN, DR. WILLIAM J. CARRINGTON (CHAIRMAN), DR. SARAH MORRIS, DR. SAMUEL BARBASH, DR. DANIEL C. REYNER, DR. JOHN S. IRVIN; UPPER ROW, STANDING: DR. JAMES H. MASON III, DR. ISAAC E. LEONARD SR., DR. ROBERT A. KILDUFFE, DR. LOUIS FEINSTEIN, DR. LEVI M. WALKER, DR. HARRY SUBIN, D. STANLEY M. McGEEHAN, DR. BAXTER H. TIMBERLAKE, DR. JEAN ALBERT GRUHLER, DR. CLYDE L. CUMMER (CLEVELAND), DR. CLARENCE L. ANDREWS, DR. CHARLES HYMAN, DR. CLIFFORD K. MURRAY

Anesthesiology and Miscellaneous Topics: Isaac Edward Leonard Jr. and Allan Rieck.

Subcommittee on Registration: Charles Hyman, Chairman.

Subcommittee on Scientific Exhibit: Robert Anthony Kilduffe, Chairman.

Subcommittee on Technical Exhibits: Isaac Edward Leonard Sr., Chairman.

Subcommittee on Hotels: V. Earl Johnson, Chairman.

Subcommittee on Publicity: Samuel Barbash, Chairman.

Subcommittee on Finance: Alfred Washington Westney, Chairman.

Subcommittee on Information: Edward Guion, Chairman.

Subcommittee on Lay Cooperation: Clarence Bernard Whims, Chairman.

Subcommittee on Motion Pictures: Stanley Marton McGeehan, Chairman.

Subcommittee on Publications: Sloan Giffin Stewart, Chairman.

Subcommittee on Printing and Badges: Louis Feinstein, Chairman.

Subcommittee on Transportation: Clifford Kinnaird Murray, Chairman.

Subcommittee on Women Physicians: Sarah I. Morris, Philadelphia, Chairman.

Subcommittee on Entertainment:

Opening General Meeting: William Wellington Fox, Chairman.

House of Delegates: David Bacharach Allman, Chairman.

President's Reception and Ball: Baxter Hall Timberlake, Chairman.

Distinguished Guests: C. Coulter Charlton, Chairman.

Service Clubs: Edward Foy Uzzell, Chairman.

Golf: Walt Ponder Conaway, Chairman.

Alumni Reunions: Daniel Cooper Reyner, Chairman.

Fraternity Luncheons and Dinners: Jean Albert Gruhler, Chairman.

Beach Activities: Carl A. Surran, Chairman.

Women's Entertainment: Mrs. Katherine Allman, Chairman.

ENTERTAINMENT

Dinner for Delegates

A dinner is being arranged for Monday, June 8, for members of the House of Delegates and officers of the American Medical Association. Complete information concerning the dinner and entertainment will be available at the first meeting of the House of Delegates on Monday morning, June 8.

Luncheon for Delegates

A luncheon for the members of the House of Delegates and the officers of the American Medical Association is being planned for Tuesday noon, June 9, between the morning and afternoon sessions of the House of Delegates at the Hotel Traymore.

Opening General Meeting

The Opening General Meeting will be held on Tuesday evening, June 9, in the Ball Room, Second Floor, Convention Hall. The program will begin at 8 o'clock.

President's Reception and Ball

The President of the American Medical Association will be honored with a reception and ball to be held Thursday evening, June 11, at 9 o'clock, Hotel Traymore.

Alumni and Board Reunions

Notice has been received of the following alumni and board dinners and luncheons to be held during the time of the session:

AMERICAN BOARD OF ANESTHESIOLOGY, Dinner, Wednesday, June 10.

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, Dinner, Wednesday, June 10, 9 p. m., Hotel Claridge.

DUKE UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10, 7:30 p. m., at Hackneys.

GEORGETOWN MEDICAL ALUMNI CLUB, Luncheon, Wednesday, June 10, 1 p. m., Hotel Dennis.

HARVARD MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10, Hotel Claridge.

ON THE STAGE AT THE ATLANTIC CITY SESSION IN 1937: IN THE BACK ROW, READING LEFT TO RIGHT: DRS. RALPH A. FENTON, CHARLES B. WRIGHT, ROGER I. LEE, HERMAN L. KRETSCHMER, FREDERIC E. SONDERN AND, AT THE EXTREME RIGHT, DRS. ARTHUR W. BOOTH, ALLEN H. BUNCE, THOMAS S. CULLEN; FRONT ROW: DRS. HILTON S. READ, WILLIAM G. HERRMAN, J. H. J. UPHAM, ROCK SLEYSTER, WILLIAM J. CARRINGTON, JAMES S. McLESTER, EDWARD H. CARY, WALTER L. BIERRING, WILLIAM D. HAGGARD, HUBERT WORK, GEORGE H. SIMMONS AND, STANDING, DR. CHARLES GORDON HEYD

JEFFERSON MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10, 6:30 p. m., Hotel Traymore.

JOHNS HOPKINS MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10, 7 p. m., Hotel Claridge.

LOUISIANA STATE UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Smoker, Wednesday, June 10, 8 p. m., Hotel Ambassador.

LOYOLA UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Luncheon, June 10, 12:30 p. m., Hotel Chalfonte-Haddon Hall.

NATIONAL BOARD OF MEDICAL EXAMINERS, Luncheon, Sunday, June 7, 12 m., Hotel Marlborough-Blenheim.

NEW YORK UNIVERSITY ALUMNI FEDERATION, Luncheon, Thursday, June 11, 12 m.

NORTHWESTERN UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10.

RUSH MEDICAL COLLEGE ALUMNI ASSOCIATION, Luncheon, June 10, 12:30 p. m., Hotel Chalfonte-Haddon Hall.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY, Banquet, Wednesday, June 10, 6:30 p. m., Hotel Claridge. Dr. Anton J. Carlson will talk on "Is Modern Man Losing His Appetite?" Tickets at $3.50 each may be obtained in advance from Dr. Walter L. Palmer, 950 E. 59th Street, Chicago.

ST. LOUIS MEDICAL ALUMNI ASSOCIATION, Luncheon, Wednesday, June 10.

TUFTS MEDICAL ALUMNI ASSOCIATION, Luncheon, June 10.

UNIVERSITY OF COLORADO MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 10.

UNIVERSITY OF LOUISVILLE ALUMNI, Reunion, Wednesday, June 10, 6:30 p. m., Solarium, Hotel Jefferson.

UNIVERSITY OF PENNSYLVANIA MEDICAL ALUMNI ASSOCIATION, Smoker and Banquet, Wednesday, June 10, 9 p. m., Hotel Madison.

WOMEN MEMBERS OF AMERICAN MEDICAL ASSOCIATION, Dinner, Wednesday, June 10, 7 p. m., Hotel Ambassador.

Fraternity Functions

ALPHA KAPPA KAPPA, Luncheon, Wednesday, June 10, 12:20 p. m., Hotel Ambassador.

ALPHA OMEGA ALPHA, Dinner, Thursday, June 11.

NU SIGMA NU, Luncheon, June 11, 1 p. m., Hotel Claridge.

OMEGA UPSILON PHI, Luncheon, Wednesday, June 10, 12:30 p. m., Hotel Dennis.

PHI ALPHA SIGMA, Luncheon, Thursday, June 11.

PHI BETA PI, Luncheon, June 10, 12:30 p. m., Hotel Dennis.

PHI DELTA EPSILON, Luncheon, Wednesday, June 10, 12:30 p. m., Hotel Ritz-Carlton.

PHI LAMBDA KAPPA, Luncheon, Wednesday, June 10, 1 p. m., Hotel Ritz-Carlton.

PHI RHO SIGMA, Luncheon, June 10, Hotel Ambassador.

THETA KAPPA PSI, Luncheon, Wednesday, June 10, 12:15 p. m., Hotel Madison.

WOMAN'S AUXILIARY

The Chairman of the Committee on Local Arrangements of the Woman's Auxiliary, Mrs. David B. Allman, and the hostesses, the Woman's Auxiliary to the County Medical Society and the Woman's Auxiliary to the Medical Society of New Jersey extend a most cordial invitation to all women who are auxiliary members or guests of physicians attending the annual session to participate in all social functions and to attend the general sessions. Whether auxiliary members or not, wives of doctors will be most welcome.

Auxiliary headquarters will be on the Lounge Floor of Haddon Hall. All meetings and functions will be held at Haddon Hall unless otherwise stated in the program. Please register early and obtain your badge and program of the sessions and social functions.

All tickets should be purchased soon after arrival. Members of the Hospitality and the Information Committees will be at the hotels and at the guests' registration desk at Convention Hall. Committee members will gladly help plan for an interesting visit in Atlantic City. Tickets will be sold only at auxiliary headquarters in Haddon Hall. All meetings and social affairs will begin at the time scheduled. Please be prompt.

Registration hours are from 11 a. m. to 4 p. m. Sunday, June 7, and 8:30 a. m. to 4 p. m. Monday, June 8 through Friday, June 12. Auxiliary members may register only at headquarters in Haddon Hall. Guests may register at headquarters or at the woman's registration desk in Convention Hall.

Preconvention Meetings

SUNDAY, JUNE 7

2 p. m. to 4 p. m. The members of the Hospitality Committee, Mrs. Joseph Poland, chairman, will welcome members and guests of the Woman's Auxiliary.

7 p. m. Meeting of Finance Committee, Mrs. Harold F. Wahlquist, chairman.

MONDAY, JUNE 8

9 a. m. to 12 noon. Meeting of Board of Directors, Mrs. R. E. Mosiman presiding, Committee Room D, Lounge Floor.

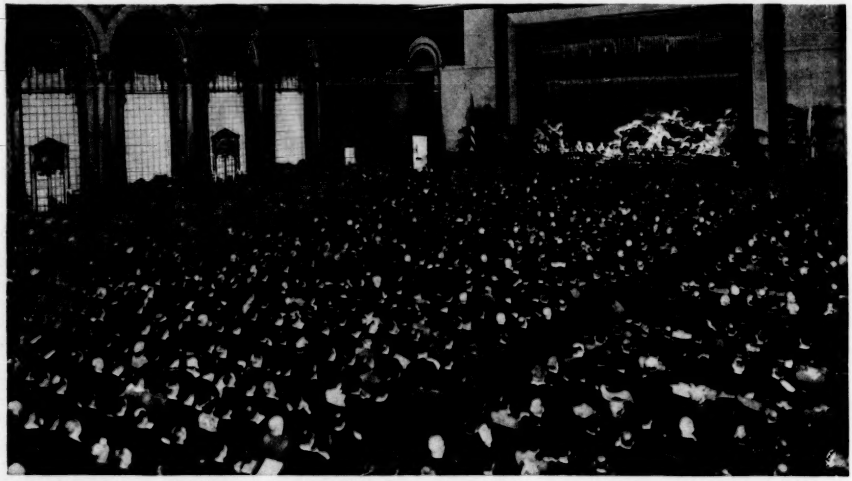
12:30 p. m. Luncheon in honor of President-Elect Mrs. Frank Haggard. Guests will be the past presidents and the members of the Advisory Council. Mrs. R. E. Mosiman, hostess.

4 p. m. to 6 p. m. Tea honoring Mrs. R. E. Mosiman and Mrs. Frank Haggard will be given for members of the national Board of Directors and guests at Haddon Hall, Garden Room, Lounge Floor.

Reports of Officers:
- Recording Secretary, Mrs. S. H. Flowers.
- Corresponding Secretary, Mrs. R. E. Ahlquist.
- Treasurer, Mrs. D. W. Thomas.
- Auditor, report to be read by the Recording Secretary.

Reports of Chairmen of Standing Committees:
- Archives, Mrs. Charles E. Sears.
- Exhibits, Mrs. Ily R. Beir.
- Finance, Mrs. Harold F. Wahlquest.
- Hygeia, Mrs. George R. Dillinger.
- Legislation, Mrs. Jesse D. Hamer.
- Organization, Mrs. John L. Bauer.
- Press and Publicity, Mrs. George H. Ewell.
- Program, Mrs. William Hibbitts.
- Public Relations, Mrs. Frank P. Dwyer.
- Revisions, Mrs. Eustace A. Allen.

Reports of Chairmen of Special Committees:
- Circulation of the Bulletin, Mrs. Charles H. Werner.
- Supplies, Mrs. J. E. Purdy.



OPENING GENERAL MEETING, ATLANTIC CITY SESSION, 1937, ATTENDED BY THOUSANDS OF VISITORS, WHO HEARD THE PROGRAM AND THE MAGNIFICENT CHOIR UNDER THE FINEST SURROUNDINGS IN ANY CONVENTION HALL IN AMERICA

General Meetings

TUESDAY, JUNE 9

9 a. m. Formal Opening of the Convention of the Woman's Auxiliary to the American Medical Association at Haddon Hall, Vernon Room, Lounge Floor, Mrs. R. E. Mosiman, presiding.

Invocation. Rev. Warren W. Way, D.D., St. James Episcopal Church, Atlantic City.
Address of Welcome. Mrs. J. H. Hornberger.
Response. Mrs. William J. Butler.
In Memoriam. Mrs. Joseph E. Wier.
Introduction of Mrs. David B. Allman, Chairman of the Committee on Local Arrangements.
Greetings. Dr. William J. Carrington.
Minutes of Nineteenth Annual Meeting. Mrs. S. H. Flowers.
Roll Call. Mrs. S. H. Flowers.
Reports of Chairmen of Convention Committee:
- Credentials and Registration, Mrs. R. J. McDonald.
- Convention Rules, Mrs. E. Latane Flanagan.
- Resolutions, Mrs. Arthur A. Herold.

President's Message. Mrs. R. E. Mosiman.
Presentation of President-Elect, Mrs. Frank Haggard.
Report of Historian, Mrs. John J. Ryan.
Report of Parliamentarian, Mrs. R. E. Fitzgerald.

12:30 p. m. Luncheon in honor of past presidents of the Woman's Auxiliary to the American Medical Association in Rutland Room, Haddon Hall. Tickets $2.

Guest Speakers: Dr. Frank H. Lahey, President, American Medical Association; Dr. W. W. Bauer, Director, Bureau of Health Education, American Medical Association; Mrs. Augustus S. Kech, Director of Health Education, Department of Health, Commonwealth of Pennsylvania.

2:30 p. m. Conference for presidents and chairmen of standing committees of state auxiliaries, Mrs. John L. Bauer and Mrs. Frank Haggard presiding.

8 p. m. Opening General Meeting of the American Medical Association, Ball Room, Convention Hall. Members of the Woman's Auxiliary and guests are welcome.

WEDNESDAY, JUNE 10

9 a. m. General Session, Woman's Auxiliary to the American Medical Association, Vernon Room, Lounge Floor, Mrs. R. E. Mosiman presiding.

Minutes. Mrs. S. H. Flowers.
Announcements.

Reports of the Convention Committees:
General Chairman, Mrs. David B. Allman.
Credentials and Registration, Mrs. R. J. McDonald.
Resolutions, Mrs. Arthur A. Herold.
Courtesy Resolutions, Mrs. Oswald R. Carlander.
Reports of State Presidents.
Report of the Nominating Committee.
Election of Officers.
Installation of Officers, Mrs. J. Newton Hunsberger.
Presentation of President's Pin.
Inaugural Address. Mrs. Frank Haggard.
Minutes. Mrs. S. H. Flowers.
12:30 p. m. Annual Luncheon, Rutland Room, Mrs. R. E. Mosiman presiding. Tickets $2.
Greetings. Dr. Arthur W. Booth.
Guest Speakers: Dr. Fred W. Rankin, President-Elect of the American Medical Association; Dr. Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; Dr. Charles Gordon Heyd, member of the Council on Medical Education and Hospitals of the American Medical Association.

THURSDAY, JUNE 11

9:30 a. m. Executive Committee Meeting, Solarium, Lounge Floor, Haddon Hall, Mrs. Frank Haggard, presiding.
10 a. m. Board of Directors Meeting, Mrs. Frank Haggard presiding.
6:30 p. m. Annual Dinner for members, husbands and guests. Rutland Room, Haddon Hall. Dr. Raimundo de Castro, Havana, Cuba, Guest Speaker. Tickets $3.
9 p. m. Reception and Ball in honor of the President of the American Medical Association, Hotel Traymore.

FRIDAY, JUNE 12

Shopping and sightseeing under the direction of the Hospitality Committee.

CHARACTERISTIC OF ATLANTIC CITY. THE CHAIRS WHICH ROLL COMFORTABLY ON THE BOARD WALK, PROPELLED—SOMETIMES—BY MAN POWER; SPECIAL FEES HAVE BEEN MADE FOR VISITORS TO THE AMERICAN MEDICAL ASSOCIATION MEETING

RADIO PROGRAM

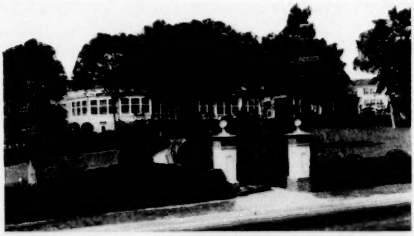
Radio broadcasts of the Atlantic City session of the American Medical Association will be arranged as usual. The detailed schedule of radio broadcasts will be published daily at Atlantic City in the *Daily Bulletin*.

GOLF TOURNAMENT

The American Medical Golfing Association will hold its twenty-eighth annual tournament at Seaview Country Club, Atlantic City, on Monday, June 8.

FORTY TROPHIES AND PRIZES

Thirty-six holes of golf will be played in competition for the forty trophies and prizes in the eight events. Trophies will be awarded for the Association Championship, thirty-six holes gross, the Will Walter Trophy; the Association Handicap Championship, thirty-six holes net, the Detroit Trophy; Championship Flight, First Gross, thirty-six holes, the St. Louis Trophy; Championship Flight, First Net, thirty-six holes, the President's Trophy; Eighteen Hole Championship, the Golden State Trophy; Eighteen Hole Handicap Championship, the Ben Thomas Trophy and the Atlantic City Trophy; Maturity Event, limited to Fellows over 60 years of age, the Minneapolis Trophy; and the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips Trophy. Thirty other prizes will be awarded for the various flights.



SEAVIEW COUNTRY CLUB; THIS COURSE HAS A BUNKER IN THE MIDDLE OF THE FIRST GREEN

TWO CHAMPIONSHIP COURSES

The Seaview Country Club at Absecon, N. J., has two eighteen hole championship courses, as well as another course through the woods. After the tournament, the annual golf banquet will be held at 7 p. m. at the clubhouse, which is one of the most elaborate in the country, having two hundred and fifty bedrooms for guests which will be available to American Medical Golfing Association Fellows, and a large indoor salt water pool. Golfing Fellows who desire rooms reserved in the clubhouse may write to Dr. Conaway, chairman of the committee.

ATLANTIC CITY GOLF COMMITTEE

The Atlantic City Golf Committee is under the chairmanship of Dr. Walt P. Conaway, 1723 Pacific Avenue, Atlantic City, assisted by Drs. John Pennington and Karl M. Scott.

APPLICATION FOR MEMBERSHIP

All male Fellows of the American Medical Association are cordially invited to become members of the American Medical Golfing Association. Write Executive Secretary Bill Burns, 2020 Olds Tower, Lansing, Mich., for an application blank. Participants in the tournament are required to present their home club handicap, signed by the club secretary. No handicap over thirty is allowed. No trophy is awarded a Fellow who is absent from the annual dinner.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

GENERAL SCIENTIFIC MEETINGS

Monday, June 8, 2 p. m., Ball Room, Convention Hall

2:00 p. m. The Influence of Anoxemia on Hepatopoietic Activity. ALBERTO HURTADO, Lima, Peru.

2:30 p. m. Manson's Schistosomiasis. ENRIQUE KOPPISCH, San Juan, Puerto Rico.

3:00 p. m. Typhoidal Myocardosis: Its General Conception and Treatment. ENRIQUE SALADRIGAS ZAYAS, Havana, Cuba.

3:30 p. m. Aviation Medicine in the Royal Canadian Air Force. G. E. HALL, Ottawa, Canada.

4:00 p. m. Address. IGNACIO CHAVEZ, Mexico City, Mexico.

4:30 p. m. The Clinical Consideration of the Chemical Mechanisms Underlying the Formation of Urinary Calculi. JOHN MCINTOSH, Montreal, Canada.

Tuesday, June 9, 9:30 a. m., Ball Room, Convention Hall

9:30 a. m. Selective Service and the Medical Profession in Total War. LEWIS B. HERSHEY, Washington, D. C.

10:00 a. m. The Venereal Disease Problem. C. S. STEPHENSON, Washington, D. C.

10:30 a. m. Progress in the Army's Fight Against Malaria. JAMES S. SIMMONS, Washington, D. C.

11:00 a. m. Sylvatic Plague of Today and Tomorrow. KARL F. MEYER, San Francisco.

11:30 a. m. The Present Status of the Influenza Problem. FRANK L. HORSFALL, New York.

12:00 m. The Effects of the Sulfonamide Drugs on the Blood. ROY R. KRACKE, Emory University, Ga.

Tuesday, June 9, 2 p. m., Ball Room, Convention Hall

2:00 p. m. The Role of Physical Therapy in the Rehabilitation of Disabled Soldiers. RALPH PEMBERTON, Philadelphia.

2:30 p. m. Studies in Hypertension. IRVINE H. PAGE, Indianapolis.

3:00 p. m. Newer Knowledge of Epilepsy. WILLIAM GORDON LENNOX, Boston.

3:30 p. m. Painful Backs: The Diagnosis and Treatment. PHILIP LEWIN, Chicago.

4:00 p. m. An Evaluation of the Kenny Treatment of Poliomyelitis. W. H. COLE, St. Paul.

THE OPENING GENERAL MEETING

Ball Room, Second Floor, Convention Hall
Tuesday, June 9—8 p. m.

Music. MISS LOIS MILLER at the Console.

Introduction of the President, FRANK H. LAHEY. ROBERT A. BRADLEY, President, Atlantic County Medical Society.

Call to Order by the President, FRANK H. LAHEY.

Presentation of Colors.

Our National Anthem.

Invocation. REV. GEORGE W. LAWRENCE.

Welcome from Medical Profession of New Jersey. ELIAS J. MARSH, President, Medical Society of New Jersey.

Welcome to Atlantic City:
HON. THOMAS D. TAGGART JR., Mayor of Atlantic City.
HON. CHARLES EDISON, Governor of New Jersey.

Music.

Announcements. WILLIAM J. CARRINGTON, Chairman, Local Committee on Arrangements.

Introduction of Distinguished guests.

Introduction and Installation of President-Elect Fred W. RANKIN, Lexington, Ky.

Address. FRED W. RANKIN, President.

Presentation of Medal to Retiring President FRANK H. LAHEY. ARTHUR W. BOOTH, Chairman of the Board of Trustees.

Presentation of Distinguished Service Medal. FRED W. RANKIN, President.

Benediction. RT. REV. MONSIGNOR MAURICE R. SPILLANE.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program, nor is the list complete. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers, as well as lists of committees, program of the Opening General Meeting, list of entertainments, map of Atlantic City and other information. To prevent misunderstandings and protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN BALL ROOM, SECOND FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—ROY W. SCOTT, Cleveland.

Vice Chairman—G. K. FENN, Chicago.

Secretary—W. D. STROUD, Philadelphia.

Executive Committee—WILLIAM S. MCCANN, Rochester, N. Y.; FRED M. SMITH, Iowa City; ROY W. SCOTT, Cleveland.

Wednesday, June 10—2 p. m.

The Effect of Meat and Meat Fractions on the Fatty Liver of Depancreatized and Pancreatic Duct Ligated Dogs (Lantern Demonstration). ELAINE P. RALLI and SAUL H. RUBIN, New York.

Insulin Resistance in Diabetes Mellitus in Man (Lantern Demonstration). JAMES A. GREENE, Iowa City.

Billings Lecture: Advances in the Diagnosis and Treatment of Pancreatic Disease (Lantern Demonstration). JOSEPH H. PRATT, Boston.

The Role of Estrogenic Substances in the Management of Diabetes (Lantern Demonstration). JOSEPH T. BEARDWOOD JR., Philadelphia.

Etiology of Peptic Ulcer. RUSSELL S. BOLES, Philadelphia.

Thursday, June 11—2 p. m.

Election of Officers

Modern Treatment of Pneumococcic Pneumonia (Lantern Demonstration). HARRISON F. FLIPPIN, LEON SCHWARTZ and ALBERT H. DOMM, Philadelphia.
Discussion to be opened by ADOLPH S. RUMREICH, Chicago.

Chairman's Address (Lantern Demonstration). ROY W. SCOTT, Cleveland.

Sulfonamide Toxicity as a Cause of Death in New York City in 1941 (Lantern Demonstration).
W. D. SUTLIFF and MILTON HELPERN, New York.
Discussion to be opened by PERRIN H. LONG, Baltimore, and RUSSELL L. CECIL, New York.

Psychosomatic Studies in Hypertension (Lantern Demonstration). EDWARD WEISS, Philadelphia.

Intrathoracic Tumors (Lantern Demonstration).
FRANK S. DOLLEY, Los Angeles.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS IN SECTION ROOM E, FIRST FLOOR, CONVENTION HALL

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Its Pharmacologic and Therapeutic Action in Man (Lantern Demonstration).
IRVING S. WRIGHT and ANDREW G. PRANDONI, New York.

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Experimental Studies (Lantern Demonstration).
JESSE L. BOLLMAN and F. W. PRESTON, Rochester, Minn.

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Clinical Studies (Lantern Demonstration).
EDGAR V. ALLEN, NELSON W. BARKER and JOHN M. WAUGH, Rochester, Minn.
Discussion on papers of DRS. WRIGHT and PRANDONI, DRS. BOLLMAN and PRESTON and DRS. ALLEN, BARKER and WAUGH to be opened by SHEPARD SHAPIRO, New York, and K. K. CHEN, Indianapolis.

Address (Lantern Demonstration).
IGNACIO CHAVEZ, Mexico City, Mexico.

The Response of Experimental and Clinical Gallbladder Infections to Sulfonamide Compounds (Lantern Demonstration).
LESTER M. MORRISON, WILLIAM A. SWALM, W. EMERY BURNETT, FRANK W. KONZELMANN and EARLE H. SPAULDING, Philadelphia.

An Analysis of the Operative Treatment of Patent Ductus Arteriosus (Lantern Demonstration).
M. J. SHAPIRO and ANCEL B. KEYS, Minneapolis.

Discussion of Electrocardiograms (Lantern Demonstration).
HOWARD B. SPRAGUE, Newport, R. I., and HAROLD E. B. PARDEE, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN SECTION ROOM C, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—ARTHUR W. ALLEN, Boston.

Vice Chairman—WILLIAM L. ESTES JR., Bethlehem, Pa.

Secretary—ALTON OCHSNER, New Orleans.

Executive Committee—THOMAS M. JOYCE, Portland, Ore.; LLOYD NOLAND, Fairfield, Ala.; ARTHUR W. ALLEN, Boston.

Wednesday, June 10—9 a. m.

Succinyl Sulfathiazole as an Adjuvant in Surgery of the Large Bowel (Lantern Demonstration).
EDGAR J. POTH, Baltimore.
Discussion to be opened by SAMUEL C. HARVEY, New Haven, Conn., and JOHN S. LOCKWOOD, Wynnewood, Pa.

Lesions of the Right Colon Involving Right Colectomy.
FRANK H. LAHEY, Boston.

Resection and Immediate Anastomosis for Carcinoma of the Colon (Lantern Demonstration).
HARVEY B. STONE and SAMUEL MCLANAHAN, Baltimore.
Discussion on papers of DR. LAHEY and DRS. STONE and MCLANAHAN to be opened by C. W. MAYO, Rochester, Minn.; HENRY W. CAVE, New York, and ARTHUR W. ALLEN, Boston.

Complications of the Combined Abdominoperineal Operation Based on Over Five Hundred Cases (Lantern Demonstration). THOMAS E. JONES, Cleveland.
Discussion to be opened by FREDERICK A. COLLER, Ann Arbor, Mich., and E. PARKER HAYDEN, Boston.

Experimental and Clinical Studies of Intestinal Motility and Postoperative Distention (Lantern and Motion Picture Demonstration). CHARLES B. PUESTOW, Chicago.
Discussion to be opened by J. PAUL NORTH, Philadelphia, and C. G. JOHNSTON, Detroit.

The Prevention of Liver Damage and the Facilitation of Repair in the Liver by Diet (Lantern Demonstration).
I. S. RAVDIN, Philadelphia.
Discussion to be opened by ALLEN O. WHIPPLE, New York, and WALTER E. LEE, Philadelphia.

Thursday, June 11—9 a. m.

The Prevention of Pulmonary Complications Following Thigh Amputations by High Ligation of the Femoral Vein (Lantern Demonstration).
J. ROSS VEAL, Washington, D. C.

Pulmonary Embolism: A Clinical and Experimental Study (Lantern Demonstration). W. J. POTTS, Oak Park, Ill.
Discussion on papers of DR. VEAL and DR. POTTS to be opened by GEZA DE TAKATS, Chicago, and FRANK THEIS, Chicago, and E. V. ALLEN, Rochester, Minn.

Chairman's Address: Subtotal Gastrectomy for Stenosing Duodenal Ulcer (Lantern and Motion Picture Demonstration). ARTHUR W. ALLEN, Boston.

Management of Skull Fractures and Brain Injuries (Lantern Demonstration).
HARRY E. MOCK and HARRY E. MOCK JR., Chicago.
Discussion to be opened by MAX M. PEET, Ann Arbor, Mich., and FRED M. DOUGLASS, Toledo, Ohio.

Pulsating Exophthalmos (Lantern Demonstration).
J. D. MARTIN JR., Atlanta, Ga.
Discussion to be opened by HARRY H. KERR, Washington, D. C., and MICHAEL E. DEBAKEY, New Orleans.

Blast Injuries to the Lungs (Lantern Demonstration).
GEORGE M. CURTIS, Columbus, Ohio.
Discussion to be opened by CASPER F. HEGNER, Denver.

Panhysterectomy: A Consideration of a New Operative Technic (Lantern Demonstration).
HAROLD L. FOSS, Danville, Pa.
Discussion to be opened by JAMES C. MASSON, Rochester, Minn., and CONRAD G. COLLINS, New Orleans.

Friday, June 12—9 a. m.

Election of Officers

Classification of Primary Cases of Cancer of the Breast (Lantern Demonstration). U. V. PORTMANN, Cleveland.

The Role of Surgery and Radiation in Cancer of the Breast (Lantern Demonstration).
FRANK E. ADAIR, New York.
Discussion on papers of DR. PORTMANN and DR. ADAIR to be opened by SHIELDS WARREN, Boston, and C. D. HAAGENSEN and WILLIAM C. WHITE, New York.

Acute Protein Deficiency in Shock, Burns, Intestinal Obstruction and Peritonitis (Lantern Demonstration).
ROBERT ELMAN, St. Louis.
Discussion to be opened by ALEXANDER BRUNSCHWIG, Chicago, and H. N. HARKINS, Detroit.

Acute Cholecystitis (Lantern Demonstration).
ELLIOTT C. CUTLER and ROBERT ZOLLINGER, Boston.
Discussion to be opened by FRANK GLENN, New York, and HENRY F. GRAHAM, Brooklyn.

Is the Asthmatic Patient a Good Surgical Risk (Lantern Demonstration)?
F. W. GAARDE, L. E. PRICKMAN and H. J. RASZKOWSKI, Rochester, Minn.
Discussion to be opened by L. N. GAY, Baltimore.

Intraspinal Administration of Ammonium Sulfate.
WILLIAM BATES, Philadelphia.
Discussion to be opened by ROBERT A. GROFF, Philadelphia, and JACOB GOELLER, Irvington, N. J.

SECTION ON OBSTETRICS AND GYNECOLOGY

MEETS IN SECTION ROOM C, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—WALTER T. DANNREUTHER, New York.
Vice Chairman—LEROY A. CALKINS, Kansas City, Mo.
Secretary—PHILIP F. WILLIAMS, Philadelphia.
Executive Committee—LUDWIG A. EMGE, San Francisco; NORMAN F. MILLER, Ann Arbor, Mich.; WALTER T. DANNREUTHER, New York.

Wednesday, June 10—2 p. m.

Clinical Evaluation of Stilbestrol in Gynecology and Obstetrics (Lantern Demonstration).
A. R. ABARBANEL, Baltimore, and HENRY ARANOW, New York.
Discussion to be opened by EMIL NOVAK, Baltimore, and ROBERT B. GREENBLATT, Augusta, Ga.

Implantation of Testosterone Propionate Pellets in Gynecic Disorders (Lantern Demonstration).
ROBERT B. GREENBLATT, Augusta, Ga.
Discussion to be opened by WILLARD M. ALLEN, St. Louis, and UDALL J. SALMON, New York.

Vaginal Antisepsis During Labor: Ten Thousand Vaginal Deliveries Without a Death from Puerperal Infection (Lantern Demonstration). H. W. MAYES, Brooklyn.
Discussion to be opened by PAUL TITUS, Pittsburgh, and ROBERT GORDON DOUGLAS, New York.

Conservative Treatment of Inversion of the Uterus (Lantern Demonstration).
CHARLES E. MCLENNAN and JOHN L. MCKELVEY, Minneapolis.
Discussion to be opened by W. BENSON HARER, Philadelphia, and W. A. COVENTRY, Duluth, Minn.

PANORAMA OF THE EXHIBITS AT THE ATLANTIC CITY SESSION IN 1937; IN THE FOREGROUND ONE SEES THE VISITORS MADE A RECORD FOR CONTINUED TOTAL ATTENDANCE

Vaginal Tampons in Menstrual Hygiene (Lantern Demonstration).

J. MILTON SINGLETON and HERBERT F. VANORDEN, Kansas City, Mo.

Discussion to be opened by GEORGE GRAY WARD, New York, and MADELINE J. THORNTON, Madison, Wis.

Thursday, June 11—2 p. m.

Election of Officers

SYMPOSIUM ON HYPERTENSIVE-ALBUMINURIC PREGNANCY

Classification and Medical Relationships of Hypertensive-Albuminuric Pregnancy (Lantern Demonstration).

ALVIN J. B. TILLMAN, New York.

Endocrinologic Physiology of Hypertensive-Albuminuric Pregnancy (Lantern Demonstration).

HOWARD C. TAYLOR JR., New York.

Etiology, Prophylaxis and Treatment of Hypertensive-Albuminuric Pregnancy (Lantern Demonstration).

WILLIAM J. DIECKMANN, Chicago.

Discussion on papers of DR. TILLMAN, DR. TAYLOR and DR. DIECKMANN to be opened by HERBERT CHASIS, New York; E. L. KING, New Orleans; JOHN P. PETERS, New Haven, Conn.; W. W. HERRICK, New York, and FOSTER S. KELLOGG, Boston.

Chairman's Address: Educational Objectives of the American Board of Obstetrics and Gynecology.

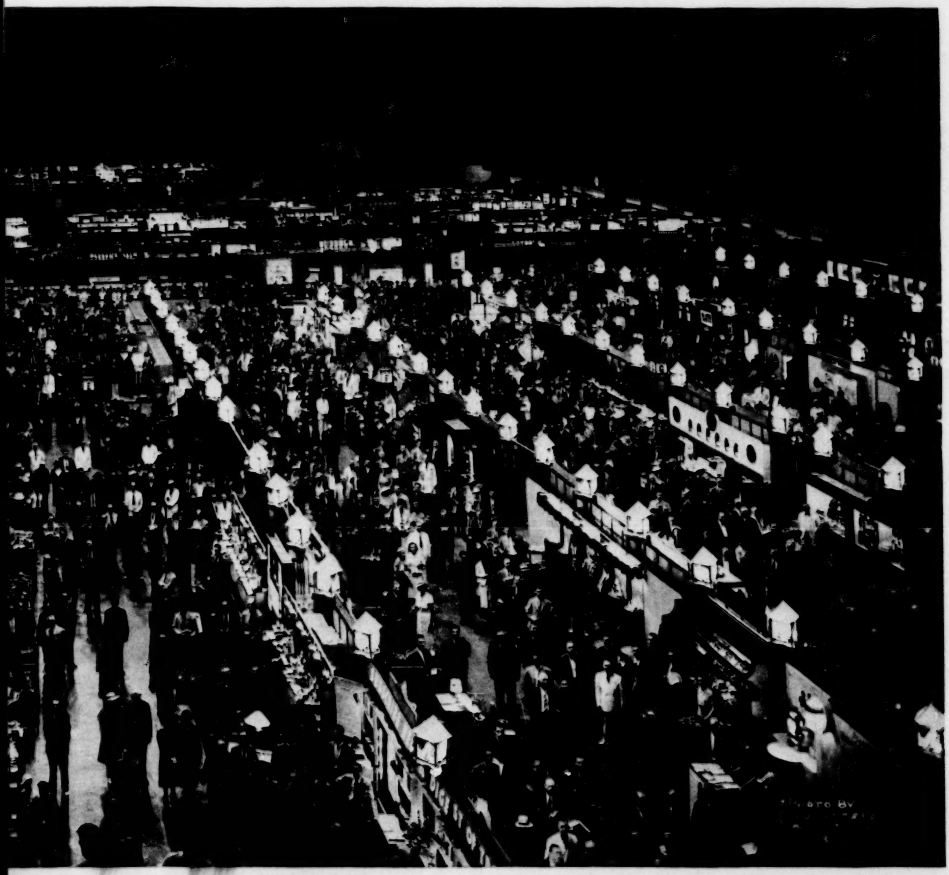
WALTER T. DANNREUTHER, New York.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON RADIOLOGY IN SECTION ROOM A, FIRST FLOOR, CONVENTION HALL

Excessive Menstrual Bleeding in Adolescent Girls (Lantern Demonstration). WILLARD M. ALLEN, St. Louis.

Irradiation Control of Irregular Bleeding in Young Girls (Lantern Demonstration). IRA I. KAPLAN, New York.

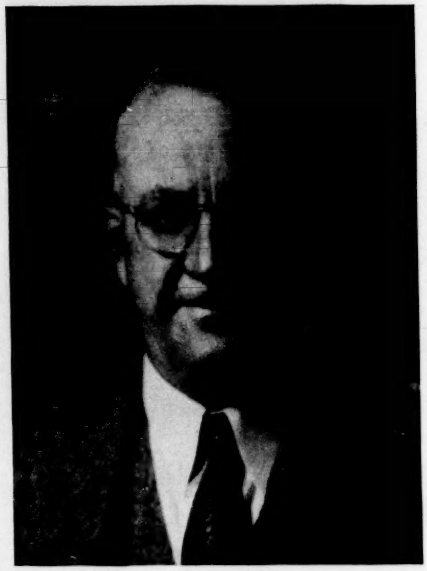


RESPONDING EAGERLY TO THE REQUEST FOR THE PHOTOGRAPH; IN THE BACKGROUND THE SCIENTIFIC EXHIBIT, WHICH

The Effect of Radiation on Germ Plasma (Lantern Demonstration). CLARENCE COOK LITTLE, Bar Harbor, Maine.

Excessive Bleeding at the Menopause or Associated with Myoma (Lantern Demonstration).
CONRAD G. COLLINS, New Orleans.

Discussion on papers of DR. ALLEN, DR. KAPLAN, DR. LITTLE and DR. COLLINS to be opened by RAMSAY SPILLMAN, New York; VIRGIL S. COUNSELLER, Rochester, Minn.; LEWIS C. SCHEFFEY, Philadelphia; GEORGE H. GARDNER, Chicago; WILLIAM E. COSTOLOW, Los Angeles; RICHARD W. TELINDE, Baltimore, and GEORGE E. PFAHLER, Philadelphia.



DR. WILLIAM J. CARRINGTON, CHAIRMAN, LOCAL COMMITTEE ON ARRANGEMENTS

SECTION ON OPHTHALMOLOGY

MEETS IN SECTION ROOM G, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—LAWRENCE T. POST, St. Louis.

Vice Chairman—W. R. BUFFINGTON, New Orleans.

Secretary—DERRICK VAIL, Cincinnati.

Executive Committee—HARRY S. GRADLE, Chicago; ALBERT C. SNELL, Rochester, N. Y.; LAWRENCE T. POST, St. Louis.

Wednesday, June 10—9 a. m.

Chairman's Address. LAWRENCE T. POST, St. Louis.

Address. MOACYR E. ALVARO, São Paulo, Brazil.

Urologic Geriatrics. JOHN H. MORRISSEY, New York.

Medical Geriatrics (Lantern Demonstration).
GEORGE M. PIERSOL, Philadelphia.

Neuropsychiatric Geriatrics (Lantern Demonstration).
HENRY W. WOLTMAN, Rochester, Minn.

Ophthalmic Geriatrics (Lantern Demonstration).
CONRAD BERENS, New York.

Thursday, June 11—9 a. m.

Fibroblastic Overgrowth of Persistent Tunica Vasculosa Lentis in Infants Born Prematurely: IV. Etiologic Factors (Lantern and Motion Picture Demonstration).
T. L. TERRY, Boston.

Discussion to be opened by PARKER HEATH, Detroit, and HENRY C. HADEN, Houston, Texas.

The Nature, Scope and Significance of Aniseikonia (Lantern Demonstration).
WALTER B. LANCASTER, Hanover, N. H.

Discussion to be opened by ERNEST A. W. SHEPPARD and ERIC LILJENCRANTZ, Washington, D. C.

A Simple Quantitative Test for Acuity and Reliability of Binocular Stereopsis (Lantern Demonstration).
FRED H. VERHOEFF, Boston.

Discussion to be opened by MAYNARD C. WHEELER, New York, and JOHN B. HITZ, Milwaukee.

Experimental Studies on the Dynamics of the Intracapsular Cataract Extraction, Suspensory Ligament and Hannover's Canal (Lantern and Motion Picture Demonstration). JACOB GOLDSMITH, New York.

Discussion to be opened by MANUEL U. TRONCOSO and HENRY J. MINSKY, New York.

Color Discrimination in Industry (Lantern Demonstration).
JOSEPH H. TIFFIN, Lafayette, Ind., and HEDWIG S. KUHN, Hammond, Ind.

Discussion to be opened by ALFRED COWAN, Philadelphia, and PETER C. KORNFELD, Chicago.

Demonstration Session

Friday, June 12—9 a. m.

Executive Session

Election of Officers

The Removal of Metallic Foreign Bodies from the Eyeball and the Orbit (Lantern Demonstration).
EDMUND B. SPAETH, Philadelphia.

Discussion to be opened by EDWARD STIEREN, Pittsburgh, and RAYMOND L. PFEIFFER, New York.

The Ophthalmologist's Place in the Prevention of Traffic Accidents. LOWELL S. SELLING, Detroit.

Discussion to be opened by S. JUDD BEACH, Portland, Maine, and ALBERT C. SNELL, Rochester, N. Y.

Lymphomatous Tumors of the Eye and Its Adnexa (Lantern Demonstration). JOHN S. MCGAVIC, New York.

Discussion to be opened by WILLIAM L. BENEDICT, Rochester, Minn., and BENJAMIN RONES, Washington, D. C.

Ocular Changes in Young Diabetic Patients (Lantern Demonstration). CECIL S. O'BRIEN and J. H. ALLEN, Iowa City.

Discussion to be opened by GLEN G. GIBSON, Philadelphia, and WILLIAM P. MCGUIRE, Winchester, Va.

Alkaptonuria with Ochronosis of the Sclera (Lantern Demonstration). JAMES W. SMITH, New York.

Discussion to be opened by MILTON L. BERLINER, New York.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN SECTION ROOM G, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—GORDON F. HARKNESS, Davenport, Iowa.

Vice Chairman—DANIEL S. CUNNING, New York.

Secretary—LOUIS H. CLERF, Philadelphia.

Executive Committee—ARTHUR W. PROETZ, St. Louis; LEROY A. SCHALL, Boston; GORDON F. HARKNESS, Davenport, Iowa.

Wednesday, June 10—2 p. m.

A Quantitative Evaluation of Vasoconstrictor Agents in the Obstructed Nose (Lantern Demonstration).
HERMAN J. STERNSTEIN, Boston.

Diagnosis and Treatment of Deep Neck Infections (Lantern Demonstration). HENRY B. ORTON, Newark, N. J.

Discussion to be opened by HARRIS P. MOSHER, Marblehead, Mass.; THOMAS E. CARMODY, Denver, and AUGUST L. BECK, New Rochelle, N. Y.

Rhinoscleroma. DANIEL S. CUNNING, New York.

Discussion to be opened by FRANCIS C. WOOD, New York, and FRED W. DIXON, Cleveland.

Otolaryngologic Aspects of Aviation.
LEON D. CARSON, Washington, D. C.
Discussion to be opened by R. J. HUNTER, Philadelphia.

Pulmonary Tuberculosis Masquerading as Laryngitis (Lantern Demonstration). JOSEPH C. DONNELLY, Philadelphia.
Discussion to be opened by FRANK R. SPENCER, Boulder, Colo., and FREDERICK T. HILL, Waterville, Maine.

Thursday, June 11—2 p. m.

Election of Officers

Chairman's Address: Postgraduate Education and Delivery of Medical Service (Lantern Demonstration).
GORDON F. HARKNESS, Davenport, Iowa

Accidental Case of Cerebellar Abscess: Complication of Chronic Cholesteatomatous Otitis Media.
R. DAVID DE SANSON, Rio de Janeiro, Brazil.

The Management of Fractures Involving the Paranasal Sinuses (Lantern Demonstration).
JOHN J. SHEA, Memphis, Tenn.
Discussion to be opened by CLAIRE L. STRAITH, Detroit, and ROBERT H. IVY, Philadelphia.

SECTION ON PEDIATRICS

MEETS IN BALL ROOM, SECOND FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—PHILIP M. STIMSON, New York.
Vice Chairman—OSCAR REISS, Los Angeles.
Secretary—HUGH L. DWYER, Kansas City, Mo.
Executive Committee—ALBERT D. KAISER, Rochester, N. Y.; JULIUS H. HESS, Chicago; PHILIP M. STIMSON, New York.

Wednesday, June 10—9 a. m.

Pertussis Immunity with Toxin and with Antitoxin (Lantern Demonstration).
JESSE G. M. BULLOWA and JANET D. ALTERMAN, New York.

Placental Transmission of Pertussis Antibodies Following Inoculation of the Pregnant Mother (Lantern Demonstration).
PHILIP COHEN and SAMUEL J. SCADRON, New York.

Studies on Methods of Prevention of Epidemic Influenza.
JOSEPH STOKES JR. and WERNER HENLE, Philadelphia.

THE BOARDWALK AND BATHING BEACH, NOTED THROUGHOUT THE WORLD

Laryngeal Stenosis (Lantern Demonstration).
SIMON JESBERG, Los Angeles.
Discussion to be opened by FLETCHER D. WOODWARD, Charlottesville, Va.

Reflex Pain Effects Produced by Abnormal Movement of the Lower Jaw (Lantern Demonstration).
JAMES B. COSTEN, St. Louis.

A Simple Method for Measuring the Percentage of Capacity for Hearing Speech (Lantern Demonstration).
EDMUND P. FOWLER, New York.
Discussion to be opened by W. E. GROVE, Milwaukee, and HORACE NEWHART, Minneapolis.

Friday, June 12—9 a. m.

JOINT MEETING WITH THE SECTION ON PEDIATRICS IN BALL ROOM, SECOND FLOOR, CONVENTION HALL

Bronchiectasis and Sinusitis in Children: Their Interrelationship and Treatment (Lantern Demonstration).
D. E. STAUNTON WISHART, Toronto, Canada.

A Survey of Two Thousand Cases of Otitis Media and Mastoiditis in Children (Lantern Demonstration).
ADOLPH G. DESANCTIS, New York.

Atypical Laryngeal and Vocal Changes in Adolescence.
JAMES SONNETT GREENE, New York.

Fractures and Dislocations of the Outer and Inner Nasal Framework in Infants and Young Children and Orthopedic Methods for Their Correction (Lantern Demonstration).
MYRON F. METZENBAUM, Cleveland.

Cytoplasmic Modification of Genetic Trends as Observed in the Newborn (Lantern Demonstration).
WILLIAM F. PETERSEN and ALVIN MAYNE, Chicago.

Measles Encephalitis: Report of Fifty-Six Cases with Follow-Up Studies in Thirty Cases (Lantern Demonstration).
ABRAHAM M. LITVAK, IRVING J. SANDS and HARRY GIBEL, Brooklyn.

Chemotherapy in Childhood Sepsis (Lantern Demonstration).
ABRAM KANOF, BENJAMIN KRAMER and ISIDOR LEBER, Brooklyn.

Thursday, June 11—9 a. m.

Election of Officers

Chairman's Address: A Rationalization of the Sister Kenny Treatment of Poliomyelitis.
PHILIP M. STIMSON, New York.

Treatment of Nephrosis with Vitamin A and Unsaturated Fatty Acid Therapy (Lantern Demonstration).
GEORGE W. CALDWELL, New York.

Observations on Lipoid Nephrosis over a Period of Twenty Years (Lantern Demonstration).
HERMAN SCHWARZ and JEROME L. KOHN, New York.

Congenital and Acquired Syphilis in Infants and Children: Treatment with Massive Doses of Arsenic Intravenously (Lantern Demonstration).
I. MICHAEL LEVIN, SAMUEL J. HOFFMAN, DAVID S. KORANSKY, IRVING B. RICHTER and BERNARD GUMBINER, Chicago.

Nicotine: Excretion in Breast Milk and Urine from Cigaret Smoking; Its Effect on Nursling (Lantern Demonstration).
A. M. DANNENBERG and H. HARRIS PERLMAN, Philadelphia.

Management of Male Pubescence (Lantern Demonstration).
WILLIAM A. SCHONFELD, New York.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Bronchiectasis and Sinusitis in Children: Their Interrelationship and Treatment (Lantern Demonstration).
D. E. STAUNTON WISHART, Toronto, Canada.

A Survey of Two Thousand Cases of Otitis Media and Mastoiditis in Children (Lantern Demonstration).
ADOLPH G. DESANCTIS, New York.

Atypical Laryngeal and Vocal Changes in Adolescence.
JAMES SONNETT GREENE, New York.

Fractures and Dislocations of the Outer and Inner Nasal Framework in Infants and Young Children and Orthopedic Methods for Their Correction (Lantern Demonstration).
MYRON F. METZENBAUM, Cleveland.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

MEETS IN SECTION ROOM E, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—WALLACE M. YATER, Washington, D. C.
Vice Chairman—TINSLEY R. HARRISON, Winston-Salem, N. C.
Secretary—EDGAR V. ALLEN, Rochester, Minn.
Executive Committee—IRVING S. WRIGHT, New York; C. M. GRUBER, Philadelphia; WALLACE M. YATER, Washington, D. C.

Wednesday, June 10—9 a. m.

Prognosis in Hypertension.
ROBERT M. DALEY and HARRY E. UNGERLEIDER, New York, and RICHARD S. GUBNER, Brooklyn.

The Causes and Prevention of Sudden Death in Coronary Disease (Lantern Demonstration). O. P. J. FALK, St. Louis.

Therapeutics of Pneumonia on a Statewide Basis (Lantern Demonstration). EDWARD L. BORTZ, Philadelphia.

Effect of Gastric Resection on Gastric Acidity (Lantern Demonstration).
MORRIS T. FRIEDELL and C. M. SHAAR, Philadelphia.

Observations on Renal Blood Flow and Glomerular Filtration Rate as Influenced by Environmental Temperature Changes (Lantern Demonstration).
GEORGE V. BYFIELD and ROBERT W. KEETON, Chicago.

Clinical Use of Amino Acids for the Maintenance of Nitrogen Equilibrium (Lantern Demonstration).
SAMUEL S. ALTSHULER, Detroit.

Thursday, June 11—9 a. m.

Election of Officers

Chairman's Address: What's Wrong with Modern Therapeutics? WALLACE M. YATER, Washington, D. C.

Treatment of Asthma: A Survey of the Value of Treatment During Twenty Years (Lantern Demonstration).
LEON UNGER and A. ALVIN WOLF, Chicago.

Treatment of Anemia Associated with Uncorrected Vitamin Deficiency: Beneficial Effects of Iron (Lantern Demonstration).
CARL V. MOORE, St. Louis, and RICHARD W. VILTER and TOM D. SPIES, Cincinnati.
Discussion to be opened by M. M. WINTROBE, Baltimore.

Treatment of Pain and Disability of Shoulder and Arm by Intramuscular Injection of Procaine Hydrochloride (Lantern and Motion Picture Demonstration).
JANET G. TRAVELL and SEYMOUR H. RINZLER, New York.

Treatment of Syphilis with Clorarsen (Lantern Demonstration).
R. H. KAMPMEIER and H. B. HENNING, Nashville, Tenn.

Treatment of Arthritis with Vitamin and Endocrine Preparations: Emphasis of Their Limited Value (Lantern Demonstration). R. H. FREYBERG, Ann Arbor, Mich.

The Treatment of Portal Cirrhosis: Physiologic Considerations (Lantern Demonstration). CARL H. GREENE, New York. Discussion to be opened by WILLIAM S. MCCANN, Rochester, N. Y., and SEYMOUR J. GRAY, Chicago.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON PRACTICE OF MEDICINE

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Its Pharmacologic and Therapeutic Action in Man (Lantern Demonstration).
IRVING S. WRIGHT and ANDREW G. PRANDONI, New York.

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Experimental Studies (Lantern Demonstration).
JESSE L. BOLLMAN and F. W. PRESTON, Rochester, Minn.

Dicoumarin [3,3'-Methylene-Bis-(4-Hydroxycoumarin)]: Clinical Studies (Lantern Demonstration).
EDGAR V. ALLEN, NELSON W. BARKER and JOHN M. WAUGH, Rochester, Minn.
Discussion on papers of DRS. WRIGHT and PRANDONI, DRS. BOLLMAN and PRESTON and DRS. ALLEN, BARKER and WAUGH to be opened by SHEPARD SHAPIRO, New York, and K. K. CHEN, Indianapolis.

Address (Lantern Demonstration).
IGNACIO CHAVEZ, Mexico City, Mexico.

The Response of Experimental and Clinical Gallbladder Infections to Sulfonamide Compounds (Lantern Demonstration).
LESTER M. MORRISON, WILLIAM A. SWALM, W. EMERY BURNETT, FRANK W. KONZELMANN and EARLE H. SPAULDING, Philadelphia.

An Analysis of the Operative Treatment of Patent Ductus Arteriosus (Lantern Demonstration).
M. J. SHAPIRO and ANCEL B. KEYS, Minneapolis.

Discussion of Electrocardiograms.
HOWARD B. SPRAGUE, Newport, R. I., and HAROLD E. B. PARDEE, New York.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN SECTION ROOM E, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—J. P. SIMONDS, Chicago.
Vice Chairman—FRANK C. MANN, Rochester, Minn.
Secretary—J. J. MOORE, Chicago.
Executive Committee—FRANK W. HARTMAN, Detroit; CARL J. WIGGERS, Cleveland; J. P. SIMONDS, Chicago.

Wednesday, June 10—2 p. m.

Chairman's Address: Clinical Interpretation of Renal Pathology in Hypertension and Glomerulonephritis (Lantern Demonstration). J. P. SIMONDS, Chicago.

Treatment of Experimental Renal Hypertension with Renin (Lantern Demonstration).
GEORGE E. WAKERLIN, Chicago.

Effect of Splanchnicectomy on Renal Blood Flow in Arterial Hypertension (Lantern Demonstration).
PIERO PIO FOA, WARD W. WOODS and MAX M. PEET, Ann Arbor, Mich.

Chronic Altitude Sickness. ALBERTO HURTADO, Lima, Peru.

Characteristics of Food Poisoning Outbreaks of Bacterial Origin. GAIL M. DACK, Chicago.

Irregular Isoagglutinins (Lantern Demonstration).
ISRAEL DAVIDSOHN, Chicago.

Thursday, June 11—2 p. m.

Election of Officers

Clinical Experiences with 3,3'-Methylene-Bis-(4-Hydroxycoumarin) (Lantern Demonstration).
WINFIELD L. BUTSCH, Buffalo.

Experimental Studies Concerning Heparin (Lantern Demonstration). DAVID I. MACHT, Baltimore.

The Evaluation of Antiseptics.
ALBERT C. HUNTER, Washington, D. C.

The Effects of Sulfonamide Drugs on the Blood (Lantern Demonstration).
ROY R. KRACKE, Emory University, Ga., and ELEANOR W. TOWNSEND, Atlanta, Ga.

Address. OLYMPIO DA FONSECA, Rio de Janeiro, Brazil.

The Presence of Avirulent Tubercle Bacilli in Pulmonary Tuberculosis in Man (Lantern Demonstration).
HARRY J. CORPER, Denver.

Pectin Intravenously (Lantern Demonstration).
FRANK W. HARTMAN, Detroit.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY IN SECTION ROOM F, FIRST FLOOR, CONVENTION HALL

SYMPOSIUM ON LIVER

J. P. SIMONDS, Chicago, Conducting

The Gastrointestinal Tract and the Liver.
FRANK C. MANN, Rochester, Minn.

Liver Function Tests (Lantern Demonstration).
JOHN G. MATEER, Detroit.

The Significance of Mild Hyperbilirubinemia in Gastrointestinal Patients (Lantern Demonstration).
THOMAS A. JOHNSON and HENRY L. BOCKUS, Philadelphia.

The Clinical Prevention and Diagnosis of Liver Dysfunction (Lantern Demonstration). SIDNEY A. PORTIS, Chicago.

Cirrhosis of Liver (Lantern Demonstration).
VIRGIL H. MOON, Philadelphia.

Primary Carcinoma of the Liver (Lantern Demonstration).
DWIGHT L. WILBUR, DAVID A. WOOD and FORREST M. WILLETT, San Francisco.

The Concept of Liver Deaths (Lantern Demonstration).
CHARLES GORDON HEYD, New York.

Discussion on papers of DR. MANN, DR. MATEER, DRS. JOHNSON and BOCKUS, DR. PORTIS, DR. MOON, DRS. WILBUR, WOOD and WILLETT and DR. HEYD to be opened by CHESTER M. JONES, Boston, and HOWARD T. KARSNER, Cleveland.

SYMPOSIUM ON GASTRITIS

WALTER L. PALMER, Chicago, Conducting

Correlation of Gastroscopic and Pathologic Findings in Gastritis (Lantern Demonstration).
EDWARD B. BENEDICT and TRACY B. MALLORY, Boston.

The Significance of Hemorrhagic or Pigment Spots as Observed by Gastroscopy (Lantern Demonstration).
JULIAN M. RUFFIN, Durham, N. C.

The Early Diagnosis of Carcinoma of the Stomach (Lantern Demonstration). C. WILMER WIRTS, Philadelphia.

Relation of Atrophic Gastric Mucosa to Carcinoma of the Stomach (Lantern Demonstration).
I. R. JANKELSON and C. W. MCCLURE, Boston, and HARRY FREEDBERG, Salem, Mass.

Gastroscopic Observation in Duodenal Ulcer (Lantern Demonstration).
J. B. CAREY and R. S. YLVISAKER, Minneapolis.

Discussion on papers of DRS. BENEDICT and MALLORY, DR. RUFFIN, DR. WIRTS, DRS. JANKELSON, MCCLURE and FREEDBERG and DRS. CAREY and YLVISAKER to be opened by SHIELDS WARREN, Boston, and RUDOLF SCHINDLER, LEONIDAS H. BERRY and LEO L. J. HARDT, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN SECTION ROOM D, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—STANLEY COBB, Boston.

Vice Chairman—A. R. VONDERAHE, Cincinnati.

Secretary—J. M. NIELSEN, Los Angeles.

Executive Committee—PAUL C. BUCY, Chicago; TOM B. THROCKMORTON, Des Moines, Iowa; STANLEY COBB, Boston.

Wednesday, June 10—9 a. m.

Chairman's Address (Motion Picture Demonstration).
STANLEY COBB, Boston.

Critical Review of Shock Therapies (Lantern Demonstration).
FRANKLIN G. EBAUGH and CHARLES A. RYMER, Denver.
Discussion to be opened by HANS H. REESE, Madison, Wis., and A. E. BENNETT, Omaha.

Conditioned Reflex Treatment of Chronic Alcoholism (Motion Picture Demonstration).
WALTER L. VOEGTLIN, FREDERICK LEMERE, WILLIAM R. BROZ and PAUL F. O'HOLLAREN, Seattle.
Discussion to be opened by W. E. ASH, Council Bluffs, Iowa, and JAMES P. KING, Radford, Va.

Personality Changes and Behavior Disorders of Children Due to Pertussis: A Report Based on the Study of Five Hundred Problem Children. LOUIS A. LURIE, Cincinnati.
Discussion to be opened by A. R. VONDERAHE, Cincinnati, and S. SPAFFORD ACKERLY, Louisville, Ky.

Mesencephalic Tractotomy: A Method for the Relief of Unilateral Intractable Pain (Motion Picture Demonstration).
A. EARL WALKER, Chicago.
Discussion to be opened by FRANCIS C. GRANT, Philadelphia, and MAX M. PEET, Ann Arbor, Mich.

Ligation of the Superior Longitudinal Sinus (Lantern and Motion Picture Demonstration).
J. RUDOLPH JAEGER, Denver.
Discussion to be opened by JAMES L. POPPEN, Boston, and J. W. WATTS, Washington, D. C.

Thursday, June 11—9 a. m.

Election of Officers

Massive Hemorrhage into Brain Tumor: Its Significance and Probable Relationship to Rapidly Fatal Termination and Antecedent Trauma.
JOSEPH H. GLOBUS, New York, and MILTON R. SAPERSTEIN, Bellerose, N. Y.
Discussion to be opened by ERICH OLDBERG, Chicago.

Epidemiologic Studies of Encephalitis, Eastern and Western Equine and St. Louis Types, in Several Western States (Lantern Demonstration).
W. MCD. HAMMON, San Francisco, and FREDERIK B. BANG, Princeton, N. J.

Epidemic of Encephalitis of 1941.
JAMES P. LEAKE, Bethesda, Md.
Discussion on papers of DRS. HAMMON and BANG and DR. LEAKE to be opened by CARL TENBROECK, Princeton, N. J.

Physiologic and Pathologic Ameboid Motions of Motor End Plates (Lantern and Motion Picture Demonstration).
EBEN J. CAREY, Milwaukee.
Discussion to be opened by ARTHUR STEINDLER, Iowa City, and FRANK R. OBER, Boston.

Nontraumatic Effusions (Hygromas) of the Subdural Space as a Cause of Obscure Cerebral Symptoms (Lantern Demonstration). MICHAEL SCOTT, Philadelphia.
Discussion to be opened by ERNEST A. SPIEGEL, Philadelphia.

Ménière's Syndrome and Migraine: Observations on a Common Causal Relationship. ERIC MILES ATKINSON, New York.
Discussion to be opened by BAYARD T. HORTON, Rochester, Minn., and MARY ELIZABETH O'SULLIVAN, New York.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON ORTHOPEDIC SURGERY

PANEL DISCUSSION ON POLIOMYELITIS

STANLEY COBB, Boston, Moderator

Experimental Work on Muscular Atrophy (Lantern Demonstration). D. Y. SOLANDT, Toronto, Canada.

Pathology and Pathogenesis of Human Poliomyelitis (Lantern Demonstration). ALBERT B. SABIN, Cincinnati.

Effects of Immobilization and Activity on Neuromuscular Regeneration (Lantern Demonstration).
H. M. HINES, Iowa City.

The Role of Physical Therapy in the Early Treatment of Poliomyelitis (Lantern Demonstration).
H. R. MCCARROLL, St. Louis.

Pain and Tenderness During Acute Stage of Poliomyelitis, with Comments on Kenny Treatment.
FRANK R. OBER, Boston.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN SECTION ROOM 12, THIRD FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—C. F. LEHMANN, San Antonio, Texas.

Vice Chairman—Paul E. BECHET, New York.

Secretary—NELSON PAUL ANDERSON, Los Angeles.

Executive Committee—JOHN G. DOWNING, Boston; J. GARDNER HOPKINS, New York; C. F. LEHMANN, San Antonio, Texas.

Wednesday, June 10—9 a. m.

Chairman's Address. C. F. LEHMANN, San Antonio, Texas.

Leprosy: The Correlation of Its Clinical, Immunologic, Pathologic and Bacteriologic Aspects (Lantern Demonstration).
V. PARDO CASTELLO and FRANCISCO R. TIANT, Havana, Cuba.
Discussion to be opened by HOWARD FOX, New York.

The Place of Dermatology in the Armed Forces of the United States. WILLIAM H. GUY, Pittsburgh.
Discussion to be opened by MARION B. SULZBERGER, New York.
Cutaneous Changes in the Sprue Syndrome (Lantern Demonstration).
WILLIAM H. KAUFMAN and DUDLEY C. SMITH, Charlottesville, Va.
Discussion to be opened by J. LAMAR CALLAWAY, Durham, N. C.
Sarcoid Disease (Lantern Demonstration).
CARMEN C. THOMAS, Philadelphia.
Discussion to be opened by CLEVELAND J. WHITE, Chicago.
Sesame Oil Tumors (Lantern Demonstration).
ADOLPH H. CONRAD, ADOLPH H. CONRAD JR. and RICHARD S. WEISS, St. Louis.
Discussion to be opened by FRED D. WEIDMAN, Philadelphia, and FRANCIS A. ELLIS, Baltimore.
Primary Relapsing Febrile Nodular Panniculitis (Lantern Demonstration). J. LOWRY MILLER, New York.
Discussion to be opened by STUART C. WAY, San Francisco, and LORETTA JOY CUMMINS, Boston.

Thursday, June 11—9 a. m.

The Complement Fixation Test for Lymphogranuloma Venereum (Lantern Demonstration).
ARTHUR W. GRACE, Brooklyn, and GEOFFREY W. RAKE, New Brunswick, N. J.
Discussion to be opened by DAVID BLOOM and HELEN O. CURTH, New York.
Reporting Serologic Tests for Syphilis (Lantern Demonstration). WILLIAM A. CLARK, Houston, Texas.
Discussion to be opened by JOHN H. STOKES, Philadelphia, and BENJAMIN S. KLINE, Cleveland.
Biologic False Positives in Serologic Tests of Syphilis (Lantern Demonstration).
REUBEN L. KAHN, Ann Arbor, Mich.
Discussion to be opened by CHARLES R. REIN, New York.
Bismarsen in the Treatment of Syphilis: A Review of Fourteen Years' Experience.
HERMAN BEERMAN and BERTRAM SHAFFER, Philadelphia, and CLARENCE S. LIVINGOOD, Indiantown Gap, Pa.
Discussion to be opened by ARTHUR G. SCHOCH, Dallas, Texas.
The Use of Bismuth Compounds in Syphilotherapy: II. Results of Treatment of Latent Syphilis by Bismuth Compounds Combined in Part with Arsenicals (Lantern Demonstration).
DAVID KAHN and S. WILLIAM BECKER, Chicago.
Discussion to be opened by C. J. LUNSFORD, Oakland, Calif., and HARRY C. SAUNDERS, New York.
Bismuth Hepatitis: A Survey of 121 Cases (Lantern Demonstration).
GEORGE V. KULCHAR, San Francisco, and WILLIAM J. REYNOLDS, San Anselmo, Calif.
Discussion to be opened by JOHN E. DALTON, Indianapolis, and BERNARD APPEL, Lynn, Mass.
Mapharsen in the Treatment of Congenital Syphilis (Lantern Demonstration).
GIRSCH D. ASTRACHAN and VAN ALSTYNE H. CORNELL, New York.
Discussion to be opened by NORMAN R. INGRAHAM, Philadelphia, and JOHN E. RAUSCHKOLB, Cleveland.

Friday, June 12—9 a. m.

Election of Officers

The Treatment of Cutaneous Melanomas (Lantern Demonstration). JAMES R. DRIVER, Cleveland.
Discussion to be opened by H. FORD ANDERSON, Washington, D. C., and EUGENE F. TRAUB, New York.
Shock Proof X-Ray Apparatus in Dermatology (Lantern Demonstration).
ANTHONY C. CIPOLLARO and ARTHUR MUTSCHELLER, New York.
Discussion to be opened by C. GUY LANE, Boston, and GEORGE C. ANDREWS, New York.
Microaerophilic Streptococcus Infection Causing Destruction of the Nose. MAURICE J. COSTELLO, New York.
Discussion to be opened by FRANK L. MELENEY, New York.
Phenomenon of Black Dermographism (Lantern Demonstration).
ERICH URBACH and DONALD M. PILLSBURY, Philadelphia.
Discussion to be opened by SAMUEL M. PECK, New York.
Hydroa Estivale: A Successful Treatment.
FRANCIS M. THURMON, Boston.
Discussion to be opened by JOHN H. LAMB, Oklahoma City.
Thrombocyte Deficit (Lantern Demonstration).
MERLIN T.-R. MAYNARD, San Jose, Calif.
Discussion to be opened by THEODORE CORNBLEET, Chicago.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN SECTION ROOM B, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—HAVEN EMERSON, New York.
Vice Chairman—JOSEPH W. MOUNTIN, Washington, D. C.
Secretary—W. A. SAWYER, Rochester, N. Y.
Executive Committee—HAROLD S. DIEHL, Minneapolis; CLARENCE D. SELBY, Detroit; HAVEN EMERSON, New York.

Wednesday, June 10—2 p. m.

Gastrointestinal Disease Among Industrial Workers (Lantern Demonstration). LEMUEL C. McGEE, Wilmington, Del.
The Berkeley Plan for Industrial Health Service.
ROBERT T. LEGGE, Berkeley, Calif.
Postgraduate Education in Industrial Health.
WALTER L. BIERRING, Des Moines, Iowa.
Results of Use of Multiple Vitamins for Prevention of Colds.
HAROLD S. DIEHL, Minneapolis.
Rehabilitation in Selective Service System.
L. G. ROWNTREE, Washington, D. C.

Thursday, June 11—2 p. m.

Chairman's Address. HAVEN EMERSON, New York.
Yellow Fever. WILBUR A. SAWYER, New York.
Health Problems in Connection with War Housing Projects.
DONALD K. FREEDMAN, Washington, D. C.
Civilian Measures for the Control of the Venereal Diseases in World War II. A. J. ASELMEYER, Washington, D. C.
The Problem of Transfusion Syphilis (Lantern Demonstration).
WILLIAM W. FRYE, Nashville, Tenn.

Friday, June 12—2 p. m.

Election of Officers

Dietary Conditions Among Industrial Workers.
R. S. GOODHART, Forest Hills, N. Y.
Dietary Conditions in the Army.
PAUL E. HOWE, Washington, D. C.
Dietary Conditions in the Navy.
CHARLES S. STEPHENSON, Washington, D. C.
Results of a Medical and Nutritional Survey of Air Craft Workers. HENRY BORSOOK, Pasadena, Calif.

SECTION ON UROLOGY

MEETS IN SECTION ROOM 12, THIRD FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—VINCENT J. O'CONOR, Chicago.
Vice Chairman—GERSHOM J. THOMPSON, Rochester, Minn.
Secretary—GRAYSON L. CARROLL, St. Louis.
Executive Committee—Frederic E. B. FOLEY, St. Paul; MEREDITH F. CAMPBELL, New York; VINCENT J. O'CONOR, Chicago.

Wednesday, June 10—2 p. m.

The Urethrogram as an Aid in Diagnosis of Prostatic Abscess (Lantern Demonstration).
W. E. FORSYTHE JR., New York.
Pathologic Conditions Encountered in Horseshoe Kidney (Lantern Demonstration). A. E. GOLDSTEIN, Baltimore.
Resection of Kidney (Lantern and Motion Picture Demonstration). W. CALHOUN STIRLING, Washington, D. C.
Discussion on papers of DR. FORSYTHE, DR. GOLDSTEIN and DR. STIRLING to be opened by GEORGE C. PRATHER, Boston, and JOSEPH F. MCCARTHY, New York.
Life After Nephrectomy (Lantern Demonstration).
HERMAN L. KRETSCHMER, Chicago.
Does Vitamin A Deficiency Exist in Clinical Urolithiasis? Studies Based on Clinical and Pathologic Material (Lantern Demonstration). HUGH J. JEWETT, Baltimore.

Pancreatic Tissue Extract in Ureterospasm.
HENRY W. E. WALTHER, New Orleans.
Discussion on papers of DR. KRETSCHMER, DR. JEWETT and DR. WALTHER to be opened by NELSE F. OCKERBLAD, Kansas City, Mo.

Thursday, June 11—2 p. m.

Chairman's Address (Lantern Demonstration).
VINCENT J. O'CONOR, Chicago.
Address. JORGE CAVELIER, Bogota, Colombia, South America.
Aneurysm of the Renal Artery (Lantern Demonstration).
OSWALD S. LOWSLEY and EDWARD M. CANNON, New York.
Five Year Results of Carcinoma of the Bladder Treated by Radium (Lantern Demonstration).
B. S. BARRINGER, New York.
The Retrograde Solution of Phosphatic Urinary Calculi (Lantern Demonstration). HOWARD I. SUBY, Boston.
Scientific Dietotherapy of Renal Vascular Disease (Lantern and Motion Picture Demonstration).
F. M. ALLEN and O. M. COPE, New York.
Discussion to be opened by CYRUS E. BURFORD, St. Louis; GEORGE G. SMITH, Boston, and WILLIAM F. BRAASCH, Rochester, Minn.

Friday, June 12—2 p. m.

Election of Officers

SYMPOSIUM ON TREATMENT OF CARCINOMA OF THE PROSTATE GLAND

Carcinoma of the Prostate Gland: Clinical Data Concerning 253 Cases Treated by Transurethral Resection (Lantern Demonstration).
GERSHOM J. THOMPSON, Rochester, Minn.
A Preliminary Report of Biochemical Therapeusis in Carcinoma of the Prostate Gland (Lantern Demonstration).
WILLIAM P. HERBST, Washington, D. C.
Clinical Observation of Treatment of Advanced Carcinoma of the Prostate Gland with Metastasis (Lantern Demonstration). EDWIN P. ALYEA, Durham, N. C.
The Recognition and Treatment of the Incipient Carcinoma of the Prostate Gland (Lantern Demonstration).
CHARLES D. CREEVY, Minneapolis.
Orchiectomy in Treatment of Prostatic Carcinoma: A Report of 75 Cases Followed Six Months or More After Operation (Lantern Demonstration).
REED M. NESBIT and ROBERT H. CUMMINGS, Ann Arbor, Mich.
Discussion to be opened by H. C. BUMPUS JR., Pasadena, Calif.; ARBOR D. MUNGER, Lincoln, Neb., and PARKE G. SMITH, Cincinnati.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN SECTION ROOM D, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—JAMES A. DICKSON, Cleveland.
Vice Chairman—GUY A. CALDWELL, New Orleans.
Secretary—FRANCIS M. MCKEEVER, Los Angeles.
Executive Committee—ROBERT V. FUNSTEN, Charlottesville, Va.; J. ALBERT KEY, St. Louis; JAMES A. DICKSON, Cleveland.

Wednesday, June 10—2 p. m.

Congenital Flat Foot (Lantern Demonstration).
JOHN G. KUHNS, Boston.
Osteochondrosis Deformans Tibiae: A Type of Developing Nonrachitic Bowlegs in Children (Lantern Demonstration).
C. GLENN BARBER, Cleveland.
Odor in the Orr Treatment of Osteomyelitis and Its Prevention by Lactose. ALLAN D. WALLIS, Philadelphia.
The "Combined Operation" in Low Back and Sciatic Pain (Lantern Demonstration).
RALPH K. GHORMLEY, J. GRAFTON LOVE and HENRY HERMAN YOUNG, Rochester, Minn.
Plated Osteoperiosteal Graft (Lantern Demonstration).
EARL D. MCBRIDE, Oklahoma City.
Suggestions for Improvements in the Program for the Public Care of the Crippled Child.
A. BRUCE GILL, Philadelphia.

Thursday, June 11—2 p. m.

Election of Officers

Genu Recurvatum Following Poliomyelitis: A Controlled Method of Operative Correction (Lantern Demonstration).
C. E. IRWIN, Warm Springs, Ga.
Chairman's Address. JAMES A. DICKSON, Cleveland.
Localized Fibrous Lesions of the Long Bones (Lantern Demonstration). C. HOWARD HATCHER, Chicago.
Systemic and Local Sulfonamide Therapy of War Wounds (Lantern Demonstration). PERRIN H. LONG, Baltimore.
Amputations in War (Lantern Demonstration).
NORMAN T. KIRK, Washington, D. C.
Shelf Operation for Dislocated Hips: Especially Useful in Younger Children (Lantern Demonstration).
FOWLER B. ROBERTS, Akron, Ohio.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON NERVOUS AND MENTAL DISEASES

PANEL DISCUSSION ON POLIOMYELITIS

STANLEY COBB, Boston, Moderator

Experimental Work on Muscular Atrophy (Lantern Demonstration). D. Y. SOLANDT, Toronto, Canada.
Pathology and Pathogenesis of Human Poliomyelitis (Lantern Demonstration). ALBERT B. SABIN, Cincinnati.
Effects of Immobilization and Activity on Neuromuscular Regeneration (Lantern Demonstration).
H. M. HINES, Iowa City.
The Role of Physical Therapy in the Early Treatment of Poliomyelitis (Lantern Demonstration).
H. R. MCCARROLL, St. Louis.
Pain and Tenderness During Acute Stage of Poliomyelitis, with Comments on Kenny Treatment.
FRANK R. OBER, Boston.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN SECTION ROOM B, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—WALTER L. PALMER, Chicago.
Vice Chairman—EMMETT H. TERRELL, Richmond, Va.
Secretary—SARA M. JORDAN, Boston.
Executive Committee—A. H. AARON, Buffalo; FRANK C. YEOMANS, New York; WALTER L. PALMER, Chicago.

The annual banquet of the section will be held on Wednesday, June 10, 6:30 p. m., at the Hotel Claridge. Tickets, $3.50 a plate, may be obtained in advance from Walter L. Palmer, 950 E. 59th St., Chicago.

Wednesday, June 10—9 a. m.

Motility of the Human Colon: The Normal Pattern, Dyskinesia and Effect of Drugs (Lantern Demonstration).
A. J. ATKINSON, H. F. ADLER and A. C. IVY, Chicago.
Discussion to be opened by WALTER C. ALVAREZ, Rochester, Minn., and JOHN P. QUIGLEY, Cleveland.
The Role of Anal Glands in the Pathogenesis of Anorectal Disease (Lantern Demonstration).
MALCOLM R. HILL, Los Angeles; E. HAROLD SHRYOCK, Loma Linda, Calif., and F. GEORGE REBELL, Los Angeles.
Discussion to be opened by ROBERT A. SCARBOROUGH, San Francisco.
Primary Lymphoid Tumors of the Rectum Resembling Internal Hemorrhoids. THOMAS E. SMITH, Dallas, Texas.
Discussion to be opened by CURTICE ROSSER, Dallas, Texas.
Anesthetics Used in Proctologic Surgery (Lantern Demonstration). C. C. MECHLING, Pittsburgh.
Discussion to be opened by WALTER A. FANSLER, Minneapolis, and LOUIS J. HIRSCHMAN, Detroit.
Operative Treatment of Cancer of the Rectum and Sigmoid Without Colostomy (Lantern and Motion Picture Demonstration).
W. WAYNE BABCOCK and HARRY E. BACON, Philadelphia.
Inflammatory Stricture of the Colon (Lantern Demonstration).
E. PARKER HAYDEN, Boston.
Discussion on papers of DRS. BABCOCK and BACON and DR. HAYDEN to be opened by FRANK H. LAHEY, Boston, and THOMAS E. JONES, Cleveland.
The Infectious Diarrheas, Enteritis and Colitis (Lantern Demonstration). JOSEPH FELSEN, New York.

Metabolic Studies in Chronic Ulcerative Colitis (Lantern Demonstration).
Z. BERCOVITZ and R. C. PAGE, New York.
Discussion on papers of DR. FELSEN and DRS. BERCOVITZ and PAGE to be opened by J. A. BARGEN, Rochester, Minn.; MANFRED KRAEMER, Newark, N. J., and A. TRASOFF, Philadelphia.

Nonspecific Types of Ulcerative Proctitis: Treatment and Prognosis (Lantern Demonstration).
PHILIP W. BROWN and LOUIS A. BUIE, Rochester, Minn.
Discussion to be opened by ARTHUR W. GRACE, Brooklyn; BURRILL B. CROHN, New York, and M. PAULSON, Baltimore.

Diverticula of the Colon: Proctoscopic Findings as an Aid in the Diagnosis (Lantern and Motion Picture Demonstration). R. J. JACKMAN, Rochester, Minn.
Discussion to be opened by HENRY L. BOCKUS, Philadelphia, and JOHN C. M. BRUST, Syracuse, N. Y.

Thursday, June 11—9 a. m.

Election of Officers

Chairman's Address: The Stomach and Military Service.
WALTER L. PALMER, Chicago.

Digestive Disease and Military Service, with Special Reference to the Medical Department of the United States Army (Lantern Demonstration). JOHN L. KANTOR, New York.
Discussion to be opened by C. R. REYNOLDS, Harrisburg, Pa., and DONALD T. CHAMBERLIN, Atlanta, Ga.

PANEL DISCUSSION ON ULCER

A. H. AARON, Buffalo, Conducting

Ulcerating Lesions of the Stomach (Lantern Demonstration).
B. R. KIRKLIN, Rochester, Minn.

Gastric Secretion. BORIS P. BABKIN, Montreal, Canada.

Psychosomatic Correlations of Duodenal Ulcer.
SAMUEL MORRISON and MAURICE FELDMAN, Baltimore.

The Physiologic Basis for the Dietotherapy in Duodenal Ulcer (Lantern Demonstration).
HARRY SHAY, J. GERSHON-COHEN and SAMUEL S. FELS, Philadelphia.

An Evaluation of the Continuous Intragastric Drip Therapy of Peptic Ulcer After Ten Years of Experience (Lantern Demonstration).
ASHER WINKELSTEIN, ALBERT CORNELL and FRANKLIN HOLLANDER, New York.

Fatal Hemorrhage from Peptic Ulcer (Lantern Demonstration).
JOHN M. BLACKFORD, Seattle.

A Critical Evaluation of the Factor of Age in the Conservative and Surgical Treatment of Bleeding Peptic Ulcer (Lantern Demonstration).
JACOB MEYER and HEINRICH NECHELES, Chicago.

Treatment of Obstructive Juxtapyloric Ulcer: Combined Use of Aluminum Hydroxide Drip and Wangensteen Aspirator. V. C. ROWLAND, Cleveland.

The Selection of Operation in Patients with Gastric and Duodenal Ulcer (Lantern Demonstration).
J. WILLIAM HINTON, New York.

Jejunal Ulcers and Recurrent Hemorrhages After Partial and Subtotal Gastrectomy for Peptic Ulcer (Lantern Demonstration). EVERETT D. KIEFER, Boston.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON PATHOLOGY AND PHYSIOLOGY IN SECTION ROOM F, FIRST FLOOR, CONVENTION HALL

SYMPOSIUM ON LIVER

J. P. SIMONDS, Chicago, Conducting

The Gastrointestinal Tract and Liver.
FRANK C. MANN, Rochester, Minn.

Liver Function Tests (Lantern Demonstration).
JOHN G. MATEER, Detroit.

The Significance of Mild Hyperbilirubinemia in Gastrointestinal Patients (Lantern Demonstration).
THOMAS A. JOHNSON and HENRY L. BOCKUS, Philadelphia.

The Clinical Prevention and Diagnosis of Liver Dysfunction (Lantern Demonstration). SIDNEY A. PORTIS, Chicago.

Cirrhosis of Liver (Lantern Demonstration).
VIRGIL H. MOON, Philadelphia.

Primary Carcinoma of the Liver (Lantern Demonstration).
DWIGHT L. WILBUR, DAVID A. WOOD and FORREST M. WILLETT, San Francisco.

The Concept of Liver Deaths (Lantern Demonstration).
CHARLES GORDON HEYD, New York.
Discussion on papers of DR. MANN, DR. MATEER, DRS. JOHNSON and BOCKUS, DR. PORTIS, DR. MOON, DRS. WILBUR, WOOD and WILLETT, and DR. HEYD to be opened by CHESTER M. JONES, Boston, and HOWARD T. KARSNER, Cleveland.

SYMPOSIUM ON GASTRITIS

WALTER L. PALMER, Chicago, Conducting

Correlation of Gastroscopic and Pathologic Findings in Gastritis (Lantern Demonstration).
EDWARD B. BENEDICT and TRACY B. MALLORY, Boston.

The Significance of Hemorrhagic or Pigment Spots as Observed by Gastroscopy (Lantern Demonstration).
JULIAN M. RUFFIN, Durham, N. C.

The Early Diagnosis of Carcinoma of the Stomach (Lantern Demonstration). C. WILMER WIRTS, Philadelphia.

Relation of Atrophic Gastric Mucosa to Carcinoma of the Stomach (Lantern Demonstration).
I. R. JANKELSON and C. W. MCCLURE, Boston, and HARRY FREEDBERG, Salem, Mass.

Gastroscopic Observation in Duodenal Ulcer (Lantern Demonstration).
J. B. CAREY and R. S. YLVISAKER, Minneapolis.
Discussion on papers of DRS. BENEDICT and MALLORY, DR. RUFFIN, DR. WIRTS, DRS. JANKELSON, MCCLURE and FREEDBERG, and DRS. CAREY and YLVISAKER to be opened by SHIELDS WARREN, Boston, and RUDOLF SCHINDLER, LEONIDAS H. BERRY and LEO L. J. HARDT, Chicago.

SECTION ON RADIOLOGY

MEETS IN SECTION ROOM A, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—RALPH S. BROMER, Bryn Mawr, Pa.

Vice Chairman—LYELL C. KINNEY, San Diego, Calif.

Secretary—JOHN T. MURPHY, Toledo, Ohio.

Executive Committee—MERRILL C. SOSMAN, Boston; RAYMOND C. BEELER, Indianapolis; RALPH S. BROMER, Bryn Mawr, Pa.

Wednesday, June 10—9 a. m.

Diagnosis of Mediastinal Tumor, Aneurysm and Abnormalities of the Superior Vena Cava: The Value of Contrast Cardiovascular Visualization (Lantern Demonstration).
ISRAEL STEINBERG, New York.

Arteriography for Renoabdominal Diagnosis (Lantern Demonstration). O. A. NELSON, Seattle.

Evaluation of Angiocardiography (Lantern Demonstration).
HENRY K. TAYLOR and TERESA MCGOVERN, New York.

Chairman's Address: The Role of the Roentgenologist in the Diagnosis of Congenital Cardiac Lesions (Lantern Demonstration). RALPH S. BROMER, Bryn Mawr, Pa.

Factors Concerned in the Abnormal Distribution of Barium in the Small Bowel (Lantern Demonstration).
MARCY L. SUSSMAN and EMANUEL WACHTEL, New York.

Thursday, June 11—9 a. m.

Election of Officers

A Plea for the Prevention of Bronchiectasis (Lantern Demonstration). KARL KORNBLUM, Philadelphia.

Bronchial Obstruction in Pulmonary Embolism (Lantern Demonstration).
GEZA DE TAKATS, G. K. FENN and EDWARD L. JENKINSON, Chicago.

Carcinoma of the Cervix Treated by Initial External Roentgen Irradiation and Radium (Lantern Demonstration).
ROSCOE W. TEAHAN, HOKE WAMMOCK and JAMES L. WEATHERWAX, Philadelphia.

Insertion of Radium into the Uterus and Vagina (Lantern Demonstration). MILTON FRIEDMAN, New York.

Experimental Studies of the Mechanism of Action of Roentgen Therapy on Infection (Lantern Demonstration).
J. DEWEY BISGARD, HOWARD B. HUNT and ORVIS A. NEELY, Omaha.
Discussion to be opened by JAMES F. KELLY, Omaha.

Friday, June 12—9 a. m.

JOINT MEETING WITH SECTION ON OBSTETRICS AND GYNECOLOGY

Excessive Menstrual Bleeding in Adolescence (Lantern Demonstration). WILLARD M. ALLEN, St. Louis.

Irradiation Control of Irregular Bleeding in Young Girls (Lantern Demonstration). IRA I. KAPLAN, New York.

The Effect of Radiation on Germ Plasma (Lantern Demonstration). CLARENCE COOK LITTLE, Bar Harbor, Maine.

Excessive Bleeding at the Menopause or Associated with Myoma (Lantern Demonstration). CONRAD G. COLLINS, New Orleans.

Discussion on papers of DR. ALLEN, DR. KAPLAN, DR. LITTLE and DR. COLLINS to be opened by RAMSAY SPILLMAN, New York; VIRGIL S. COUNSELLER, Rochester, Minn.; LEWIS C. SCHEFFEY, Philadelphia; GEORGE H. GARDNER, Chicago; WILLIAM E. COSTOLOW, Los Angeles; RICHARD W. TELINDE, Baltimore, and GEORGE E. PFAHLER, Philadelphia.

SECTION ON ANESTHESIOLOGY

MEETS IN SECTION ROOM A, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SECTION

Chairman—Thomas J. COLLIER, Atlanta, Ga.

Vice Chairman—F. E. HUBBARD, Montclair, N. J.

Secretary—JOHN S. LUNDY, Rochester, Minn.

Executive Committee—H. S. RUTH, Merion, Pa.; RALPH M. WATERS, Madison, Wis.; Thomas J. COLLIER, Atlanta, Ga.

The Ritz-Carlton Hotel will be the headquarters for the anesthetists.

Wednesday, June 10—2 p. m.

Circulatory Changes During Spinal Anesthesia (Lantern Demonstration). E. M. PAPPER, New York.

Discussion to be opened by SIDNEY C. WIGGIN, Boston, and STUART C. CULLEN, Iowa City.

Spinal Anesthesia: Factors Influencing Its Success (Lantern Demonstration). LEO V. HAND, Boston.

Discussion to be opened by ROLLAND J. WHITACRE, East Cleveland, Ohio, and VIRGINIA APGAR, New York.

Rectal Anesthesia in Surgical and Obstetric Procedures (Lantern Demonstration). PAUL M. WOOD, New York.

Discussion to be opened by WESLEY BOURNE, Westmount, Quebec, Canada, and H. BOYD STEWART, Tulsa, Okla.

Morphine in Obstetric Analgesia (Lantern Demonstration). FRANKLIN F. SNYDER, Chicago.

Discussion to be opened by DOUGLAS P. MURPHY and NEWLIN F. PAXSON, Philadelphia.

Thursday, June 11—2 p. m.

Chairman's Address: Crawford W. Long 1815-1878 (Lantern Demonstration). THOMAS J. COLLIER, Atlanta, Ga.

Interdependence of Function in Anesthesia. WESLEY BOURNE, Westmount, Quebec, Canada.

Discussion to be opened by RALPH M. WATERS, Madison, Wis., and RALPH M. TOVELL, Hartford, Conn.

Intravenous Anesthesia (Lantern and Motion Picture Demonstration). FRED F. RUDDER, Atlanta, Ga., and H. F. BISHOP, Washington, D. C.

Discussion to be opened by J. ROY FULTON, Philadelphia, and ROBERT A. HINGSON, Stapleton, Staten Island, N. Y.

The Prevention and Treatment of Shock During Surgical Procedures (Lantern Demonstration). DOUGLAS B. KENDRICK JR., Washington, D. C.

Discussion to be opened by HENRY K. BEECHER, Boston, and ALFRED BLALOCK, Baltimore.

The Teaching of Anesthesiology in the Army (Lantern Demonstration). STEVENS J. MARTIN, Fort Dix, N. J.

Discussion to be opened by HENRY S. RUTH, Merion Station, Pa., and E. A. ROVENSTINE, New York.

Casualty Anesthesia in England (Lantern Demonstration). K. C. MCCARTHY, Toledo, Ohio.

Discussion to be opened by A. L. TYNES, Washington, D. C., and S. LEROY SAHLER, Rochester, N. Y.

Friday, June 12—2 p. m.

Election of Officers

Laboratory and Clinical Studies with Paraldehyde. C. L. BURSTEIN, New York.

Discussion to be opened by HENRY G. BARBOUR, New Haven, Conn., and RALPH T. KNIGHT, Minneapolis.

The Balance Between Central and Reflex Control of Respiration (Lantern Demonstration). ROBERT D. DRIPPS JR., Philadelphia.

Discussion to be opened by CARL F. SCHMIDT, Philadelphia, and F. ELMORE HUBBARD, Montclair, N. J.

Postoperative Bronchoscopy (Lantern Demonstration). HERBERT W. SCHMIDT, LLOYD H. MOUSEL and S. W. HARRINGTON, Rochester, Minn.

Discussion to be opened by PORTER P. VINSON, Richmond, Va., and PHILIP D. WOODBRIDGE, New Haven, Conn.

Effect of Anesthetics on Bronchial Tissues (Lantern Demonstration). JOHN ADRIANI, New Orleans.

Discussion to be opened by DONALD E. BRACE, Woodside, N. Y., and DOUGLASS H. BATTEN, Brooklyn.

Surface Temperature Under Anesthesia (Lantern Demonstration). RICHARD VON FOREGGER JR., Madison, Wis.

Discussion to be opened by BAYARD T. HORTON, Rochester, Minn., and PERRY P. VOLPITTO, Augusta, Ga.

SECTION ON MISCELLANEOUS TOPICS

Sessions on General Practice

MEETS IN SECTION ROOM F, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SESSIONS

Chairman—LUCIEN STARK, Norfolk, Neb.

Secretary—WINGATE M. JOHNSON, Winston-Salem, N. C.

Wednesday, June 10—9 a. m.

Chairman's Address. LUCIEN STARK, Norfolk, Neb.

Cardiology in General Practice. GEORGE M. COOK, Hammond, Ind.

Some Puzzling Aspects of Pain in the Chest (Lantern Demonstration). TINSLEY R. HARRISON, Winston-Salem, N. C.

Clinical Features and Prognosis in Myocardial Disease (Lantern Demonstration). H. W. RATHE, Waverly, Iowa.

Hypertension. HUGH P. GREELEY, Madison, Wis.

Vitamins in Dermatology. J. J. ELLER, New York.

Thursday, June 11—9 a. m.

Menopausal Symptoms and Their Treatment (Lantern Demonstration). ARCH WALLS, Detroit.

The Management of Patients with Anxiety. ELLIOTT B. EDIE, Uniontown, Pa.

What Causes Gas? WALTER C. ALVAREZ, Rochester, Minn.

The So-Called Mucous Colitis (Lantern and Motion Picture Demonstration). C. W. MCGAVRAN, Columbus, Ohio.

The Care of the Aged. M. W. THEWLIS, Wakefield, R. I.

The Modern Treatment of Pneumonia. C. T. STONE, Galveston, Texas.

Session on Legal Medicine

MEETS IN SECTION ROOM B, FIRST FLOOR, CONVENTION HALL

OFFICERS OF SESSION

Chairman—WILLIAM C. WOODWARD, Washington, D. C.

Secretary—ALAN R. MORITZ, Boston.

Friday, June 12—9 a. m.

Privileged Communications: Law versus Ethics. EDMUND M. MORGAN, Cambridge, Mass.

Legal Responsibility for Negligent Diagnosis. HUBERT W. SMITH, Cambridge, Mass.

Human Postmortem Changes in the Tropics and Their Medicolegal Significance (Lantern Demonstration). RAIMUNDO DE CASTRO, Havana, Cuba.

The Importance of Performing Autopsies on the Bodies of Persons Apparently Dead by Suicide (Lantern Demonstration). HARRISON S. MARTLAND, Newark, N. J.

Deaths by Violence in Which the Causative Injury is Likely to Escape Clinical Recognition (Lantern Demonstration). THOMAS A. GONZALES, New York.

The Advantage of the Coroner System Over That of the Medical Examiner. SAMUEL R. GERBER, Cleveland.

The Advantage of the Medical Examiner System Over That of the Coroner. TIMOTHY LEARY, Boston.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will occupy the lower level of the Atlantic City Auditorium with entrances down the stairs from the registration desks and the Technical Exhibit.

Chief among the features of interest will be the Pan American participation with exhibits from various countries dealing with tropical medicine. Special exhibits will be presented again on fractures and backache under provisions made by the Board of Trustees. The Army, the Navy, the Public Health Service, the Selective Service System and the Office of Civilian Defense will be represented with exhibits pertaining to the activities of each of those branches of the federal government. An exhibit symposium on cardiovascular disease has been arranged under the guidance of the Section on Practice of Medicine. Lectures with demonstrations will be given throughout the week on poliomyelitis and diabetes. Each section of the Scientific Assembly has sponsored groups of exhibits dealing with the various specialties, but emphasis is placed on the fact that the Scientific Exhibit is primarily for the physician in general practice.

Motion pictures will be shown each day continuously and simultaneously in four theaters adjacent to the exhibits.

Admission to the Scientific Exhibit will be limited to persons wearing Fellowship or other badges of the convention and to guests to whom special cards of admission have been issued. The public will not be admitted to the Scientific Exhibit.

SPECIAL EXHIBITS

At the request of the Committee on Scientific Exhibit of the Board of Trustees there will be two special exhibits this year. (These exhibits are not open to awards.)

Special Exhibit on Fractures

The special exhibit on fractures is presented under the auspices of the fracture exhibit committee composed of:

Kellogg Speed, Chicago, chairman.
Frank D. Dickson, Kansas City, Mo.
Walter Estell Lee, Philadelphia.

The following subjects will be considered with continuous demonstrations throughout the week:

1. How to Make and Store Plaster of Paris Bandages.
2. Fracture of the Neck of the Femur (nonoperative treatment).
3. Compression Fracture of the Os Calcis.
4. Compression Fracture of the Spine.
5. Supracondylar Fracture of the Humerus.
6. Emergency Treatment of Fractures of the Extremities.

A pamphlet giving the essential points of the exhibit has been prepared for distribution.

The local representative for the fracture committee is James H. Mason III, Atlantic City, N. J.

A large corps of demonstrators will assist the committee in the presentation of the exhibit, including:

John D. Adams, Boston.
A. P. Aitkin, Boston.
C. Glenn Barber, Cleveland.
William A. Boyd, Columbia, S. C.
Henry Briggs, East Orange, N. J.
Newton C. Browder, Boston.
Ralph G. Carothers, Cincinnati.
Burton Chance Jr., Philadelphia.
Dwight F. Clark, Evanston, Ill.
George J. Curry, Flint, Mich.
P. C. Doran, Akron, Ohio.
John D. Ellis, Chicago.
Philip S. Foisie, Boston.
Roland Hammond, Providence, R. I.
C. Howard Hatcher, Chicago.
Stanley Lawton, Chicago.
J. R. Lincoln, New York.
Walter D. Ludlum Jr., New York.
James W. Martin, Omaha.
Thomas C. McAuliffe, Philadelphia.
Arthur Metz, Chicago.
John R. Nilsson, Omaha.
E. Payne Palmer, Phoenix, Ariz.
Garrett Pipkin, Kansas City, Mo.
Sheppard Remington, Chicago.
Henry H. Ritter, New York.
Samuel L. Robbins, Cleveland.
L. D. Smith, Milwaukee.
Robert R. Stoner Jr., Philadelphia.
Russell F. Sullivan, Brookline, Mass.
Thomas J. Summey, Moorestown, N. J.
James R. Tillotson, Lima, Ohio.
Herbert W. Virgin Jr., Pensacola, Fla.
Judson D. Wilson, Columbus, Ohio.
Milton J. Wilson, New York.
Harry Winkler, Charlotte, N. C.

Special Exhibit on Backache

The special exhibit on backache is presented under the auspices of an exhibit committee composed of:

Frank R. Ober, Boston, chairman.
Carl E. Badgley, Ann Arbor, Mich.
J. Archer O'Reilly, St. Louis.
Arthur Steindler, Iowa City.
Philip D. Wilson, New York.

with the collaboration of

Eben J. Carey, Milwaukee.
Albert Ferguson, Brookline, Mass.
H. Close Hesseltine, Chicago.
K. G. Hansson, New York.
Theodore A. Willis, Cleveland.
Walter Zeit, Milwaukee.

and an advisory committee consisting of

Fremont A. Chandler, Chicago.
H. Earle Conwell, Birmingham.
John S. Coulter, Chicago.
Philip Lewin, Chicago.
Robert D. Schrock, Omaha.
E. Harlan Wilson, Columbus, Ohio.
Walter J. Zeiter, Cleveland.

The exhibit deals with the following factors:

1. Anatomy. Eben J. Carey and Walter Zeit.
   Specimens and demonstrations illustrating anatomy of the spine.
2. Pathology. Theodore A. Willis.
   Specimens and demonstrations illustrating common pathologic disturbances which are concerned in backache.
3. Physical Examinations. Frank R. Ober.
   Diagrams and demonstrations illustrating methods of physical diagnosis.
4. Roentgen Ray Technic. Albert Ferguson.
   Diagrams and roentgenograms in atlas form.
5. Neurologic Examinations. Carl E. Badgley.
   Illustrations and demonstrations covering the neurologic aspects of backache.
6. Visceral Disturbances. H. Close Hesseltine.
   Illustrations and demonstrations dealing with visceral disturbances as found in internal medicine, obstetrics, gynecology and urology.
7. Physical Therapy. K. G. Hansson.
   Illustrations and demonstrations presenting physical therapy aids in the treatment of backache.
8. General Treatment. Frank R. Ober.
   Apparatus and operative treatment for backache, with demonstrations at 10:30 and 3:30 each day, followed by general discussions concerning the use of corsets, braces and the like.

A pamphlet has been prepared for distribution which gives the essential points of the exhibit.

In addition to the physicians in charge of each booth, a competent corps of demonstrators will be present continuously throughout the week.

R. L. Anderson, Charleston, W. Va.
Joseph L. Baer, Chicago.
Samuel W. Banks, Chicago.
C. Glenn Barber, Cleveland.
Hans J. A. Behrend, New York.
E. J. Berkheiser, Chicago.
Albert L. Bershon, Toledo, Ohio.
Walter P. Blount, Milwaukee.
A. Leo Brett, Boston.
A. H. Brewster, Boston.
Lloyd T. Brown, Boston.
Herbert L. Brumbaugh, Dayton, Ohio.
B. Franklin Buzby, Camden, N. J.
John Coulter, Chicago.
James A. Dickson, Cleveland.
Joseph A. Freiberg, Cincinnati.
Robert V. Funsten, Charlottesville, Va.
Ralph K. Ghormley, Rochester, Minn.
Elmer Hess, Erie, Pa.
Louis G. Howard, Boston.
M. Beckett Howorth, New York.
Lyman H. Hoyt, Boston.
S. Leon Israel, Philadelphia.
Joseph W. Kelso, Oklahoma City.
H. Worley Kendell, Dayton, Ohio.
Samuel Kleinberg, New York.
Miland E. Knapp, Minneapolis.
Richard Kovacs, New York.
Frank Krusen, Rochester, Minn.
R. M. LeComte, Washington, D. C.
Raymond E. Lenhard, Baltimore.
Albert A. Martucci, Philadelphia.
Madge C. L. Guinness, New York.
Alexander Miller, Fort Dix, N. J.
James Raglan Miller, Hartford.
John B. Montgomery, Philadelphia.
John Royal Moore, Philadelphia.
I. William Nachlas, Baltimore.
Josef B. Nylin, Philadelphia.
Walter L. Palmer, Chicago.
Louis E. Papurt, Cleveland.
Kenneth Phillips, Miami, Fla.
Maurice M. Pike, Hartford, Conn.
S. L. Raines, Memphis, Tenn.
Fowler B. Roberts, Akron, Ohio.
Lewis C. Scheffey, Philadelphia.
William H. Schmidt, Philadelphia.
William Snow, New York.
Bror S. Troedsson, New York.
C. G. Weller, Aurora, Ill.
Walter J. Zeiter, Cleveland.

LECTURES AND DEMONSTRATIONS

Lectures with demonstrations will be presented continuously throughout the week in two theaters adjoining the exhibits.

Poliomyelitis

Lectures and demonstrations will be presented under the auspices of the National Foundation for Infantile Paralysis and the University of Minnesota School of Medicine. The method of examining patients with acute poliomyelitis for muscle tenderness, muscle spasm, and other major symptoms will be presented. The method of treatment of these symptoms, as advocated by the Australian nurse Miss Elizabeth Kenny will be demonstrated on living models. Each demonstration will be accompanied by a discussion of the symptoms and their treatment, together with a discussion of the pathologic and physiologic backgrounds for such. Charts, diagrams and photographs will be used to supplement the demonstration and discussion.

Lectures will be given daily from Monday noon to Friday noon at the following hours:

9:30 a. m.	2:30 p. m.
11:15 a. m.	4:15 p. m.

Don W. Gudakunst, New York, will be in charge, assisted by the following:

Philip M. Stimson, New York.	John F. Pohl, Minneapolis.
Wallace H. Cole, Minneapolis.	Miland E. Knapp, Minneapolis.

Diabetes

Lectures and demonstrations on the physiology, pathology, chemistry, diagnosis and treatment of diabetes will be given daily from Monday afternoon to Friday noon at the following hours:

10 a. m.	2 p. m.
11 a. m.	3 p. m.
12 noon	4 p. m.

After each lecture, time will be allowed for discussion, questions and personal interviews. The following will contribute to the program:

C. C. Bailey, Boston.	Howard F. Root, Boston.
Thorne M. Carpenter, Boston.	William C. Stadie, Philadelphia.
F. C. Dohan, Philadelphia.	Shields Warren, Boston.
Elliott P. Joslin, Boston.	Priscilla White, Boston.
F. D. W. Lukens, Philadelphia.	

Selective Service and Civilian Defense

Opportunities for conference and consultation will be given physicians concerning these two important phases of the war effort.

LEONARD G. ROWNTREE and ROBERT A. BIER, National Headquarters, Selective Service System, Washington, D. C.:

The Medical Division, National Headquarters, Selective Service System: Exhibit of charts, pictures and drawings depicting the medical work of Selective Service in all its aspects, with the analysis of the results of the physical examination of registrants.

GEORGE BAEHR, W. PALMER DEARING, HENRY VAN ZILE HYDE, JOHN S. COULTER and DUDLEY A. REEKIE, Office of Civilian Defense, Medical Division, Washington, D. C.:

Emergency Medical Service for Civilian Defense: Exhibit of charts showing organization of civilian defense for a community and progress of organization of Emergency Medical Service; a transparent poster entitled "When the Bombs Drop," illustrating the operation of the Emergency Medical Service; equipment for medical field units; chart of chemical warfare agents; model of gas decontamination station; model with gas mask and gas-proof clothing.

Section on Practice of Medicine

The representative to the Scientific Exhibit from the Section on Practice of Medicine is Louis B. LaPlace, Philadelphia. The Section is cooperating with the American Heart Association in presenting an exhibit symposium on cardiovascular disease.

EVERETT S. ELWOOD, National Board of Medical Examiners, Philadelphia:

National Board of Medical Examiners: Exhibit of charts describing the work and progress of the National Board of Medical Examiners and the results of its examinations.

ELLIOTT P. JOSLIN, HOWARD F. ROOT and PRISCILLA WHITE, George F. Baker Clinic, New England Deaconess Hospital, Boston:

Fundamental Concepts in Diabetes as a Basis for Treatment: Exhibit presenting an interpretation of the recent studies of fat metabolism and diabetes experimentally produced; presentation of new data obtained from study and treatment of pregnancy in diabetes; of childhood diabetes of long duration; analyses of statistics on coma, gangrene and the incidence of diabetes, observation on the use of newer types of insulin, vitamin deficiency in diabetic animals.

NATHAN SCHAFFER and IRVING L. APPLEBAUM, American College of Chest Physicians, Orange, N. J.:

Role of Fungi in Disease of the Chest: Exhibit of cultures of fungi; photomicrographs of the fungi and tissue sections; charts of clinical cases and roentgenograms of lung conditions; models of fungi.

E. J. KEPLER, M. H. POWER and F. J. ROBINSON, Mayo Clinic, Rochester, Minn.:

Diagnosis and Treatment of Addison's Disease: Exhibit illustrating methods adapted to the diagnosis of Addison's disease, with special attention paid to the "water test" by the exhibitor.

PAUL TITUS, Advisory Board for Medical Specialties, Pittsburgh:

Advisory Board for Medical Specialties: Exhibit of posters showing the nineteen member organizations, members of specialty boards, requirements, statistical data, certificates and literature.

H. G. WEISKOTTEN, F. H. ARESTAD, J. R. HARRIS, HOMER F. SANGER and M. G. WESTMORELAND, Council on Medical Education and Hospitals, American Medical Association, Chicago:

Progress of Medical Education: Exhibit showing output of medical and technical graduates related to war needs, including medical school graduates, interns, residents, clinical laboratory technicians, physical therapists and occupational therapists; revised data on medical education and medical licensure; annual census of hospitals for the year 1941; revised lists of approved medical colleges, hospitals approved for internships and residencies and approved technical schools.

GEORGE L. WALDBOTT, Detroit:

Wheezing That Is Not Asthma: Exhibit of roentgenograms which had been wrongly diagnosed as "asthma," including (1) simulating asthma, such as Monilia infection, substernal goiter, tuberculosis, Pancoast tumor; (2) resulting from asthma: pneumonitis, saccular bronchiectasis, spontaneous pneumothorax, chronic atelectasis of a pulmonary lobe, pulmonary blebs as a result of emphysema, spontaneous rib fractures; (3) initiating asthma: allergic pulmonary edema, pneumonitis, and Loeffler's syndrome; (4) coincident with asthma: tuberculosis, dextrocardia, mycosis of lungs and like conditions.

HENRY R. CARSTENS and J. D. LAUX, Michigan Medical Service, Detroit:

Michigan Medical Service: Exhibit of display material, charts and posters presenting the experiences as to frequency of services, costs and payments to physicians and featuring the actual results of the operation of the prepayment medical service under the sponsorship of a medical society.

ELMER H. LOUGHLIN, RICHARD H. BENNETT, SAMUEL H. SPITZ, WILLIAM W. CARTY with the assistance of MARY E. FLANAGAN, Long Island College Hospital, Brooklyn:

Pneumonia: Exhibit of charts, drawings, photographs, photomicrographs and roentgenograms presenting (1) diagnosis; (2) pathology; (3) treatment, discussing the pharmacology and use of the sulfonamide drugs, including the results of original studies in absorption, excretion and acetylation of these compounds, as well as results obtained with chemotherapy in our own as well as other series of cases; brief summary for indications for administration of serum; (4) complications of pneumonia, with recommended methods of treatment.

WILLIAM DAMESHEK, TIBOR J. GREENWALT, RUSSELL J. TAT and CAMILLE DREYFUS, J. H. Pratt Diagnostic Hospital and Boston Dispensary, Boston:

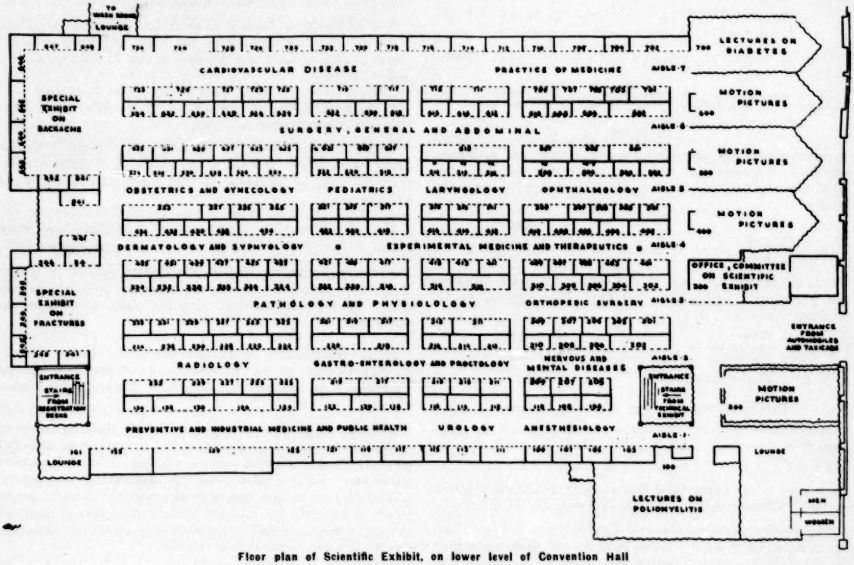
The Hemolytic Syndromes Hemoglobinurias, Hereditary and Acquired Hemolytic Anemias: Exhibit of charts, drawings, photographs and photomicrographs showing that the hemolytic syndromes may be classified as (1) the hemoglobinurias (paroxysmal cold, march, nocturnal, favism) indicating sudden and violent hemolysis; (2) the hereditary hemolytic anemias, which may be classified according to type of cell seen as (*a*) spherocytic (*b*) target cell and (*c*) sickle cell in type; (3) the acquired hemolytic anemias, due to "hypersplenism," those associated with hemolysins of agglutinins and those which are "symptomatic" of some more serious underlying condition. In the diagnosis and follow-up of cases of hemolytic jaundice, studies of the bone marrow, the blood serum and particularly of the fecal urobilinogen output are important. Cases of familial nonhemolytic jaundice must be discriminated. The management of the hemolytic crisis and of acute hemolytic anemia involves careful judgment regarding such considerations as isohemolysins, isoagglutinins, autoagglutinins, compatibility tests, transfusions and, above all, splenectomy.

W. A. SODEMAN and H. T. ENGELHARDT, Tulane University of Louisiana School of Medicine, New Orleans:

A Renal Concentration Test Employing Posterior Pituitary Extract: Exhibit of charts demonstrating (1) the physiology of the nephron; (2) the standard procedures now in use, including the range of normal and abnormal values; (3) a pictorial description of the technic employing solution of posterior pituitary; (4) diagrammatic representation of the physiologic effects of solution of posterior pituitary on diuresis, normal standards included; (5) diagrammatic comparison of the present procedure with other technics; (6) results of the test in patients with renal diseases; (7) contraindications to the test; (8) results and advantages of the procedure.

T. H. MCGAVACK and F. D. SPEER, New York Medical College, Flower and Fifth Avenue Hospitals, New York:

Size of the Heart as a Guide to the Treatment of Addison's Disease with Desoxycorticosterone Acetate: Exhibit of graphs, charts and roentgenograms showing that the size of the heart is an accurate and reliable index to the condition of the patient with Addison's disease who is receiving desoxycorticosterone actetate; roentgenograms of the chest of patients with Addison's disease showing various states of cortical activity; cardiac measurements will be brought into relationship with daily intake of sodium and daily dose of desoxycorticosterone acetate used; measurements of the heart in crisis, cardiac insufficiency and full stabilization will be compared with those seen in normal persons.



Floor plan of Scientific Exhibit, on lower level of Convention Hall

F. LOWELL DUNN, University of Nebraska College of Medicine, Omaha, and WALTER E. RAHM JR., New York:

Cathode Ray Visualization of Normal and Pathologic Chest and Pathologic Chest Sounds: The exhibit will consist of equipment used and charts and photographs of vocal fremitus recordings in normal and various pulmonary diseases. In addition there will be a preliminary analysis of normal and abnormal heart tones. The visualization and photography of chest sounds utilizing a piezo-electric microphone, a linear amplifier and a cathode ray tube offers definite refinements in analysis as compared with auditory methods.

GUILLAUME A. BOSCO, University of Buenos Aires Medical School, Buenos Aires, Argentina:

Anatomic Revision of the System of Coronary Arteries; New Nomenclature of Myocardial Infarct and Clinical and Sympto-

matologic Bases for an Anatomicotopographic Diagnosis of Coronary Arterial Obstruction: Exhibit of radiograms and electrocardiograms demonstrating the distribution of the coronary arterial system. The division of the cardiac muscle in well delimitated anatomic territories, which are tributary of the coronary arterial system, and Bosco's new nomenclature of myocardial infarct are based on the foregoing conceptions. The demonstration constitutes a categoric evidence of the fact that myocardial infarct originates from the left ventricle in 80 per cent of the cases and from the posterior wall of the right ventricle in 20 per cent of the cases, depending on the type, either normal or abnormal, of the distribution of the left circumflex coronary system.

J. Q. GRIFFITH JR., and M. A. LINDAUER, Medical Clinic of the Hospital and Robinette Foundation, University of Pennsylvania, Philadelphia:

Hypertension—Especially Its Classification and Medical Treatment: Exhibit demonstrating the tests and procedures which have been reported; apparatus for observing the capillaries of the forearm in man and measuring the minute vessel pressure; photographs and plastic materials demonstrating the method for measuring cutaneous lymphatic flow in man, for testing for antidiuretic substance in the blood, and a microtest for thiocyanate in the blood; the kind of case apt to respond well to thiocyanate therapy or irradiation of the pituitary.

EDGAR DURBIN, Denver:

A Pictorial Study of Heart Disease: Exhibit of enlarged Kodachrome pictures of various pathologic hearts and accompanying clinical signs; case histories, roentgenograms and electrocardiograms correlated with the clinical and the pathologic aspects of heart disease.

GERALD H. PRATT and JOSEPH KOVACS, Vascular Clinic, New York Post-Graduate Hospital and Medical School, Columbia University, New York:

Diagnosis and Treatment of Leg Ulcers: Exhibit of pictures and charts differentiating ulcers following arteriosclerosis, diabetes, varicose veins, syphilis and idiopathic causes; medical and surgical treatment of various types of ulcers are described.

EDWARD ALLEN EDWARDS, Boston City Hospital, and JESSE E. EDWARDS, Mallory Institute of Pathology, Boston:

Pathology of the Venous Valves: Exhibit of drawings and photomicrographs dealing with the pathology of the venous valves. The valves in thrombophlebitis show destruction, or stenosis and incompetence; in varicose veins, relative incompetence and distortion by reparative tissue, and in thromboangiitis obliterans, involvement in inflammation, and in thrombosis, as well as postobstructive changes similar to the lesions in varicose veins.

S. S. LICHTMAN, Mount Sinai Hospital, New York:

Present Status of the Treatment of Subacute Bacterial Endocarditis: Exhibit of charts summarizing results of treatment by current methods; illustrative case.

JACOB POMERANTZ, Temple University, Philadelphia:

Cardiac Pain and Its Pathways: Exhibit of a model of the heart and its associated plexuses, sympathetic pathways and connections with the peripheral nervous system; a demonstration of possible pathways transmitting pain of cardiac origin.

EDWARD F. MCLAUGHLIN, Germantown Dispensary and Hospital, Philadelphia:

Practical Points in Peripheral Vascular Disease: Exhibit of charts and transparencies dealing with the practical points of varicose veins, Buerger's disease, arteriosclerosis, emboli and like conditions.

SAMUEL BELLET and HERMAN W. OSTRUM, Philadelphia General Hospital and University of Pennsylvania, Philadelphia:

Roentgenology of Heart and Great Vessels: Exhibit of cardiac silhouettes, including both common and rare heart lesions, accompanied by explanatory notes of the history, clinical examination and salient roentgenographic features; pathologic specimens are included.

DON CARLOS PEETE, University of Kansas Medical School, Kansas City, Kan.:

Acute Rheumatic Fever and Its Complications: Exhibit describing the etiologic factors, clinical diagnosis and differential diagnosis of acute rheumatic fever. The complications of acute rheumatic fever are presented as well as a description of the physical manifestations of rheumatic heart disease, including roentgenograms and electrocardiograms of the types of mitral and aortic stenosis along with photomicrographs showing the pathologic changes in rheumatic myocarditis and pericarditis. The physical aspects of subacute bacterial endocarditis are demonstrated with photographs that include petechial hemorrhage of the conjunctiva. There is also shown a rabbit's heart in which experimental bacterial endocarditis has been produced. There will also be displayed charts showing the results of a dietary survey made on patients with acute rheumatic heart disease. This survey demonstrates that these patients have a pronounced dietary deficiency.

J. E. F. RISEMAN and ELLIOT L. SAGALL, Beth Israel Hospital, Boston:

Treatment of Angina Pectoris: Exhibit of charts and posters showing objective measurements of sixty-five different methods of therapy studied during the past nine years.

ARTHUR S. W. TOUROFF, Beth Israel Hospital and Mount Sinai Hospital, New York:

Surgical Treatment of Subacute Streptococcus Viridans Endarteritis Superimposed on Patent Ductus Arteriosus: Exhibit presenting (1) the anatomy of patent ductus arteriosus; (2) the pathology of superimposed subacute Streptococcus viridans endarteritis; (3) a discussion of the rationale of operation for the cure of infection; (4) indications and contraindications to such an operation, and (5) a report of the cases in which an operation was done by the author during the past two and a half years, illustrated by clinical charts and other data.

ISAAC STARR and A. J. RAWSON, University of Pennsylvania, Philadelphia:

The Ballistocardiograph, with Records Obtained in the Common Diseases of the Heart and Circulation: Exhibit showing a ballistocardiograph arranged so that one can stand on it and see the impacts arising from the movements of the circulation projected on a screen; records obtained in patients with coronary disease, auricular fibrillation, hypertension and other diseases of the heart and circulation; records showing the effects of exercise, drug action, fever, transfusion and other acute experiments.

MARCY L. SUSSMAN, M. A. STEINBERG and ARTHUR GRISHMAN, Mount Sinai Hospital, New York:

Angiocardiography in Congenital and Rheumatic Heart Disease: Exhibit of roentgenograms presenting a systematic investigation of various types of congenital and rheumatic heart disease has been made by angiocardiography with the aid of a multiple exposure technic. The complete clinical and laboratory data will be shown in each case in correlation with the angiocardiograms.

EMANUEL LIBMAN, New York:

Endocarditis and "Libman-Sack Disease." Exhibit of drawings and photomicrographs showing pathology of various kinds of endocarditis and especially of the form associated with Libman-Sack disease; summary of our knowledge of this disease.

LOUIS B. LAPLACE and CHARLES W. SEMISCH, Jefferson Medical College, Philadelphia:

Graphic Registration of Heart Sounds: Exhibit of graphic records of heart sounds with photographic enlargements obtained from normal subjects and patients having the commoner types of heart disease. The sound records are correlated with the

electrocardiogram and records of precordial movements and vascular pulses to facilitate interpretation. The contribution of stethocardiography to the accuracy of auscultation is illustrated and an evaluation is made of the usefulness of stethocardiography in clinical practice.

ANNA S. WRIGHT, American Heart Association, New York:

American Heart Association: Exhibit of charts and photographs showing educational material relating to heart disease.

Section on Surgery, General and Abdominal

The representative to the Scientific Exhibit from the Section on Surgery, General and Abdominal, is Grover C. Penberthy, Detroit.

ARNOLD S. JACKSON, JAMES A. JACKSON and RUSSELL JACKSON, The Jackson Clinic, Madison, Wis.:

Cancer of the Breast: Exhibit of moulages and transilluminated colored drawings showing the anatomy of the normal breast. Moulages, roentgenograms and colored photographs depicting the diagnosis for carcinoma of the breast. Colored drawings and photographs illustrating the surgical treatment. Moulages and photomicrographs demonstrating the pathology of different types of cancer. Charts showing the end results from statistical studies.

HAROLD L. FOSS and HENRY F. HUNT, Geisinger Memorial Hospital, Danville, Pa.:

Diagnosis and Treatment of Toxic Goiter: Exhibit of (1) transparencies and slides showing methods of examination in hyperthyroidism with photographs touching on differential diagnosis between toxic goiter and nervous states often confused with true hyperthyroidism; (2) the heart in toxic goiter; (3) photographs illustrating the technic of bilateral resection and multistage operations in the treatment of hyperthyroidism; (4) transparencies illustrating the pathologic states associated with acute crisis and in death from advanced hyperthyroidism.

HAROLD NEUHOF and GABRIEL P. SELEY, Mount Sinai Hospital, New York:

Excision of Main Venous Trunks for Suppurative Phlebitis: Exhibit of charts, diagrams and microscopic pathology illustrating the pathogenesis, course, treatment and prognosis of suppurative phlebitis.

ARTHUR E. HERTZLER, Halstead Hospital, Halstead, Kan.:

Goiter: Exhibit of models, specimens, drawings, photographs, photomicrographs and transparencies showing the clinical character of goiter in its different forms, as evidenced by gross and microscopic pathology, chemical changes, patient's appearance and like conditions and emphasizing the life history and evolution of the diseased thyroid gland from the earliest stage to terminal cardiotoxic goiter. Treatment confined to basic features of operative technic.

FREDERICK TICE, RICHARD DAVISON and KARL J. HENRICHSEN, Municipal Tuberculosis Sanitarium, Chicago:

Tuberculosis and Other Diseases of the Lungs: Exhibit of roentgenograms and pathologic specimens illustrating diseases of the lungs—tuberculosis and associated diseases, tumors and others—with results of surgical treatment.

MILTON S. LLOYD and JOSEPH A. BUDETTI, New York Municipal Sanatorium, Otisville, N. Y.:

Bronchoscopy in the Therapy of Pulmonary Tuberculosis: Exhibit of drawings of endobronchial lesions with contemporaneous roentgenograms of the chest, showing the value of bronchoscopy for the guidance of the collapse therapist.

WOOLFOLK BARROW, Lexington, Ky.:

Tuberculous Peritonitis: Exhibit presenting the incidence, symptoms and physical findings of approximately 100 patients with tuberculous peritonitis; careful and complete follow-up studies and results of treatment are analyzed in detail and presented with the aid of photographs and charts.

HORACIO ZALCE, Mexico City, Mexico, with the assistance of Bradley L. Coley, Memorial Hospital, New York:

Bone Tumors: Exhibit of photographs, photomicrographs, roentgenograms and specimens dealing with bone tumors.

B. GUZMAN-BLANCO, Caracas, Venezuela, with the assistance of FRANK E. ADAIR, Memorial Hospital, New York:

Cancer of the Male Breast: Exhibit of photographs, photomicrographs, charts and specimens dealing with cancer of the male breast.

ENRIQUE VIACAVA, Buenos Aires, Argentina, with the assistance of Hayes E. Martin, Memorial Hospital, New York:

Cancer of the Lip: Exhibit of photographs, photomicrographs, charts and specimens dealing with cancer of the lip.

F. H. LAHEY and ASSOCIATES, Lahey Clinic, Boston:

Diseases of the Biliary Tract: Exhibit of photographs, drawings, roentgenograms and other descriptive matter covering certain aspects of the diagnosis and pathology of disease of the biliary tract; the technic of cholecystectomy and choledochostomy and the management of common duct strictures and of obstructions due to carcinoma of the head of the pancreas.

IRWIN SCHULZ, Milwaukee Children's Hospital, Milwaukee:

Wringer Injury: Exhibit of photographs depicting experience in treating children with injuries serious enough to require hospital care. The following points are stressed: wringer injury is a clinical entity; the degree of injury may vary from slight contusion to necrosis and sloughing of skin, fat, fascia, nerve, vessels, muscle and even bone; many cases require skin grafting; damage to the hand may be permanent crippling; the degree and depth of damage are difficult to evaluate immediately after injury; progressive, serious tissue loss may be prevented by certain procedures applied early.

JOHN FALLON, JAMES T. BROSNAN and WILLIAM G. MORAN, Fallon Clinic, Worcester, Mass.:

Surgical Photography: Exhibit dealing with color still photography of lesions, operative fields and specimens; methods, apparatus, results.

J. ROSS VEAL and ROY G. KLEPSER, Gallinger Municipal Hospital, Washington, D. C.:

Treatment of Frostbite of the Extremities: Exhibit demonstrating the tissue and vascular changes in the various stages of freezing of the extremities in man, supplemented by experimental studies on animals; photomicrographs illustrating pathology of the tissue and vascular system; colored photographs of the three degrees of frostbite; arteriographs illustrating the vascular changes; a comparative study of the effects of exposure to cold in the normal, in the alcoholic and in those persons with preexisting vascular damage; outline of treatment for the various stages.

WILLIAM L. WATSON, Memorial Hospital, New York:

Cancer of the Thyroid: Exhibit of transparencies illustrating problems in diagnosis and treatment of cancer of the thyroid. The purpose of the exhibit is to correlate the diagnosis and treatment by radiation and surgery and a combination of the two.

RALPH M. WATKINS, Academy of Medicine, Cleveland:

Appendicitis in Cleveland: Exhibit showing a complete survey of all the cases of acute appendicitis, ruptured appendicitis with peritonitis and also with abscess which have occurred in the sixteen major hospitals of greater Cleveland in the past twelve years. Special emphasis is placed on the effects of delay in operation, economic status of the patient, the use of the sulfonamide drugs, the type of incision and the type of anesthetic. The analysis covers about 19,000 cases.

C. L. STRAITH, Detroit; E. H. DEKLEINE, Buffalo, and W. B. SLAUGHTER, Chicago:

Technic for Minimizing Scar Tissue Formation: Exhibit of photographs and drawings of methods used for minimizing scar

formation in cases of prominent "stitch marks," "trap door scars," depressed scars, with emphasis on utilization of Langer's lines; colored slides showing various types of cases.

JOHN O. BOWER, A. E. PEARCE, J. C. BURNS, H. B. TRACHTENBERG, J. H. CLARK, J. G. REINHOLD, L. A. TERZIAN, and G. R. KINGSLEY, Philadelphia General Hospital, Philadelphia:

Subclinical and Clinical Shock Accompanying Spreading Peritonitis—Its Recognition and Management: Exhibit dealing with: 1. Clinical background: prelethal shock is an accompaniment of death from spreading peritonitis; 94 per cent of so-called appendicitis deaths are due to spreading peritonitis; of 4,915 patients with spreading peritonitis, admitted to one hundred and eighty-one hospitals in Pennsylvania, 1,302, or 26 per cent, died. 2. Research background: spreading peritonitis induced in dogs with results of therapeutic means; similarity of reaction of dog and man to spreading peritonitis is observed; description of the technic of induction and the laboratory recognition of subclinical and clinical shock accompanying spreading peritonitis. The chemical changes in the blood and the composition of the peritoneal exudate in both man and dog shown by means of graphs. Demonstration of a simple pump for the continuous administration of plasma or other fluids. Chemical methods and apparatus employed to measure plasma and fluid deficiency and replacement; hematocrit, serum chloride, and the Kingsley direct biuret method for rapid determination of plasma protein will be illustrated. Hospital management—when and when not to operate. The administration of parenteral fluids; plasma, saline and dextrose solution based on blood studies are graphically demonstrated.

SAMUEL A. THOMPSON and MILTON J. RAISBECK, New York Medical College, New York:

Cardiopericardiopexy—The Surgical Treatment of Coronary Disease by the Establishment of Adhesive Pericarditis: Exhibit of charts, photographs, drawings and roentgenograms dealing with: 1. Experimental work showing the possibility of producing adhesive pericarditis and methods used; mortality statistics of method when used in animals. 2. Clinical work showing results of methods used in patients. 3. Preoperative and postoperative care showing selection of patients, methods of diagnosis, postoperative findings, postoperative care and follow-up examinations.

BOWMAN C. CROWELL and FRED BOSSELMAN, American College of Surgeons, Chicago:

Organization and Growth of Cancer Clinics in General Hospitals: Exhibit showing the organization of cancer clinics in general hospitals, their growth and distribution in the United States.

LEO M. ZIMMERMAN, BARRY J. ANSON and HAROLD LAUFMAN, Northwestern University Medical School, Chicago:

Anatomy and Surgery of Inguinal Hernia: Exhibit showing a study of the anatomy of the inguinofemoral region, based on actual dissection of a large number of cadavers, with layer by layer drawings in the various abdominal types, as well as in the different forms of hernia. The surgical therapy of hernia is approached from the standpoint of analysis of the actual lesion present in each type of hernia, and the operative repair planned to meet the problems thus presented. Sliding hernia is included in this study, as is also the medicolegal aspect of hernia, as interpreted in terms of the anatomy and etiology of the various types of hernia.

ALFRED H. IASON, Brooklyn:

Repair of Difficult Hernias: Exhibit of photographs, drawings, charts and pictures illustrating new technic and new instruments used in pedicled fascia lata transplant for difficult abdominal hernias; the results are compared with other methods; an analysis of 60 cases is presented.

CHARLES S. WHITE, J. LLOYD COLLINS and JACOB J. WEINSTEIN, George Washington University School of Medicine and Gallinger Municipal Hospital, Washington, D. C.:

Clinical Analysis of Blood Plasma: Exhibit of charts summarizing studies in plasma and nitrogen balance in several surgical conditions, notably shock, shock with hemorrhage, burns and hypoproteinemia; also the effect of plasma transfusions, in hospital experience, on the protein content, hematocrit estimations, blood count and blood pressures; the use of plasma and what may be expected from its use; the preparation, preservation and administration of plasma.

JAMES C. MASSON, Mayo Clinic, Rochester, Minn.:

Use of Fascia Lata in Repair of Hernias: Exhibit of models, transparencies, photographs and instruments showing the technic of obtaining the preparation and the use of living sutures (fascia lata) in the repair of various types of hernias, such as inguinal hernias, postoperative abdominal hernias, diaphragmatic, umbilical and vaginal hernias.

GREGORY L. ROBILLARD and ALFRED L. SHAPIRO, Brooklyn Cancer Institute, Brooklyn:

Operative Care of the Cancer Patient: Exhibit of charts, tables and photographs illustrating the special problems of preoperative and postoperative care in the cancer age group. Incidence, significance and management of concomitant degenerative diseases of middle age, i. e., vascular and pulmonary, in relation to radical resections. Problems of increased susceptibility to shock, wound infection, fluid and nutritional imbalance. Hypoproteinemia, hypochloremia, avitaminosis and anemia are correlated with mortality and morbidity in cancer surgery. Preoperative lymphography by vital stains as an adjunct to demonstration and successful extirpation of drainage fields.

DERYL HART and SAMUEL E. UPCHURCH, Duke University School of Medicine and Duke Hospital, Durham, N. C.:

Air Disinfection with Bactericidal Radiant Energy: Exhibit of charts and photographs illustrating the degree of air contamination present in air conditioned and non-air conditioned operating room units, the correlation of various intensity distributions of bactericidal radiant energy with the bactericidal effect throughout the operating room, and a comparison of the infection rates before the institution of bactericidal radiation with those obtained after the institution of bactericidal radiation in a variety of operative procedures, such as thoracoplasties, radical mastectomies, orthopedic operations, neurosurgical operations, herniorrhaphies and thyroidectomies.

WILLIAM BATES, BERNARD D. JUDOVICH and WINIFRED STEWART, Graduate Hospital, Philadelphia:

Relief of Pain: Exhibit of charts, graphs and case reports illustrating (1) a new form of therapy to aid in the control of intractable pain; the use of ammonium salts intraspinally and by local infiltration; relief of pain in a series of patients, including those with malignant conditions, tabes dorsalis, alcoholic neuritis, osteoarthritis and various forms of segmental and peripheral neuralgias; (2) the action of the ammonium ion on the nerve impulse, demonstrating the effect of optimal concentrations of the ammonium salts on the action current of sensory nerves, as shown by the cathode ray oscillograph; the correlation of clinical and laboratory results.

R. H. ALDRICH, Boston:

The Triple Dye Treatment of Burns: Exhibit of photographs and transparencies of various burns; charts showing mortality figures of burned patients from the Boston City Hospital; charts showing plasma loss with crust forming and non-crust forming substances; a study of the morbidity and complications in more than 3,000 burns will be shown in chart and diagram form.

JAMES F. KELLY and D. ARNOLD DOWELL, Creighton University School of Medicine, Omaha:

Roentgen Rays in Prevention and Treatment of Infections: Exhibit of data bearing on the clinical and the scientific basis for the use of roentgen therapy in infections and the changes in the clinical signs and symptoms of infectious diseases when roentgen therapy is used; cases illustrating these changes are selected from those of gas gangrene and acute peritonitis, and the prevention of infection in recent injuries such as compound fractures and gunshot wounds.

Section on Obstetrics and Gynecology

The representative to the Scientific Exhibit from the Section on Obstetrics and Gynecology is Charles E. Galloway, Evanston, Ill.

F. H. FALLS and C. S. HOLT, Department of Public Health, State of Illinois, and University of Illinois College of Medicine, Chicago:

Abortion: Exhibit of drawings, charts, transparencies and models together with blood agar plates of the more common organisms associated with septic abortion; the material covers (1) etiology, (2) therapeutic abortion, (3) pathology, (4) criminal abortion and (5) treatment of abortion. Statistical data, operative technic and the inhibiting action of corpus luteum extracts on the human uterine contractions are shown; dangers, complications and medicolegal aspects of criminal abortion are illustrated.

ARTHUR H. CURTIS, BARRY J. ANSON and TOM JONES, assisted by F. L. ASHLEY, L. E. BEATON and C. B. MCVAY, Northwestern University Medical School and University of Illinois College of Medicine, Chicago:

Gross Pelvic Anatomy in Relation to Gynecologic Surgery: Exhibit of drawings and models prepared from original dissections which were carried out in a planned serial succession, supplemented by a correlated set of drawings depicting certain surgical procedures in gynecology which are dependent on a knowledge of the anatomy illustrated.

WILLIAM BICKERS, Medical College of Virginia, Richmond:

Dysmenorrhea: Exhibit showing uterine contractions recorded by means of the intrauterine balloon during normal menstruation and during dysmenorrhea; the effects of certain drugs and hormones on the contractions; the pathologic physiology of dysmenorrhea and the rational approach to therapy.

R. A. WOODBURY, W. F. HAMILTON, RICHARD TORPIN, P. P. VOLPITTO, H. M. CLECKLEY and B. E. ABREU, University of Georgia School of Medicine, Augusta:

Effects of Pituitary Preparations, Ergonovine and Convulsants on the Arterial Pressure: Exhibit showing that therapeutic doses of pituitary preparations which contain the oxytocic principle produce transient falls of 30 to 50 mm. of mercury in men and women; a similar fall occurs in the rabbit and chicken and to a slight extent in the turtle and cat, but not in the dog; the fall in blood pressure appears to be of cardiac origin, although there is no coronary constriction. When pituitary preparations are administered during parturition, the balance between the increased intrauterine and the arterial pressure is such that the placenta is dangerously deprived of maternal blood. Similar studies are presented with the drug ergonovine. Records are shown which allow an appraisal of the mechanisms contributing to the changes in arterial pressure during convulsions produced by metrazol, electric shock and strychnine.

ABNER I. WEISMAN, Department of Gynecology, Jewish Memorial Hospital, and CHRISTOPHER W. COATES, New York Zoological Society, New York:

A New Test for Pregnancy (the Xenopus "Frog" Test): Exhibit presenting an explanation and description of the Xenopus (frog) test for pregnancy, together with the technic of extraction of urine and methods of injection of the Xenopus, and an actual demonstration of the pregnancy test. A positive reaction is denoted by the simple extrusion of eggs by the frog within six to eighteen hours after the injection of suspected urine. The extruded eggs are easily visualized by the naked eye, in the bottom of the test tank. From a series of tests performed in the last three years, this test has proved to be not only as accurate as the Aschheim-Zondek or Friedman test but more rapid, economical and simple to perform.

ROBERT L. DICKINSON and S. EMLEN STOKES, Sterilization League of New Jersey, Princeton:

Selective Sterilization for Human Betterment: Exhibit of sculptured panels showing normal anatomy and steps of operative procedure in vasectomy, and four methods of sterilizing the female.

CLARENCE J. GAMBLE, Milton, Mass.:

Contraceptive Technics Used in Public Health: Exhibit of posters showing histories and progress of the three state board of health pregnancy spacing programs in North Carolina, South Carolina and Alabama; reprints for distribution describing the development of these programs; contraceptive devices used in these programs, including the relatively new foam, powder and sponge method chosen by physicians for the majority of subjects in North Carolina and South Carolina; the method used by all subjects in the Alabama program will be shown.

ROSCOE W. TEAHAN, HOKE WAMMOCK and JAMES L. WEATHERWAX, Jeanes Hospital, Philadelphia:

Treatment of Carcinoma of the Cervix by Interstitial Radiation: Exhibit showing that an important cause of failure to cure the patient with cancer of the cervix is believed to be related to the inadequacy and inconstancy of the dose of radiation reaching the outermost parts of the diseased area. In an attempt to overcome this, the authors have supplemented external roentgen radiation with radium placed interstitially in and about the cervix and in the broad ligaments. To place such radium needles more accurately, the abdomen has been opened in each instance. Stereoscopic roentgenograms of the area taken after implantation make it possible to determine with some accuracy the amount of radiation reaching various points in the diseased area. Experience gained in such distribution has made it possible to arrange the needles in such a manner that a greater amount of radiation reaches the lymph nodes at the pelvic wall. The results obtained from such treatment are encouraging.

L. M. RANDALL, M. C. PIPER, L. A. BRUNSTING and M. B. DOCKERTY, Mayo Clinic, Rochester, Minn.:

Kraurosis and Allied Lesions of the Vulva and Certain Neoplasms of the Ovary: Exhibit consists of (1) wax models, colored photographs, photomicrographs and short histories and findings demonstrating kraurosis and allied lesions of the vulva and (2) certain types of ovarian neoplasms demonstrated with the aid of colored wax models of selected specimens accompanied by description of the outstanding characteristics of each, together with photomicrographs.

JACOB HOFFMAN, Jefferson Medical College and Hospital, Philadelphia:

Operation of a Female Sex Endocrine Clinic: Exhibit of photographs of endocrinopathies and constitutional types; photomicrographs illustrating the human endometrial cycle and abnormalities thereof; schematic presentation of the endocrine factors concerned in menstrual and reproductive function; charts presenting hormone tests and their application, and accredited sex hormone preparations with their indications and evaluation.

Section on Ophthalmology

The section exhibit committee of the Section on Ophthalmology consists of Georgiana Dvorak Theobald, Oak Park, Ill., chairman; Derrick Vail, Cincinnati, and W. Ivan Lillie, Philadelphia.

DONALD J. LYLE, Cincinnati:

Neuro-Ophthalmology: Exhibit showing anatomic, clinical and pathologic relationships in the field of neuro-ophthalmology; correlation of anatomic sections and specimens with clinical aspects including case history, field studies and retinal photographs; surgeon's report and specimen removed at operation or postmortem specimen and pathologist's report; photographs of sections and specimens of brain; retinal photographs and fields; gross and microscopic sections and specimens of brain.

T. L. TERRY, Massachusetts Eye and Ear Infirmary, Boston:

Fibroblastic Overgrowth of Persistent Tunica Vasculosa Lentis in Infants Born Prematurely: Exhibit of retrolental fibroplasia as found in 5 infants born prematurely. Colored illustrations show condition in various stages. Data relative to occurrence and treatment are included. Normal development and regression of the hyaloid artery and tunica vasculosa lentis are illustrated by reconstructions and drawings which include

the ophthalmoscopic appearance of eyes of normal premature infants. Other anomalies are shown related to the persistence of this vascular system.

G. A. SHETTER, BERNARD SAMUELS, CONRAD BERENS, BRITTAIN PAYNE and E. B. BURCHELL, New York Eye and Ear Infirmary, New York:

Macroscopic and Microscopic Ocular Pathology: Exhibit showing gross pathology consisting of mounted hemisections of globes, photomicrographs of unusual slides and differential staining.

DAVID J. MORGENSTERN, New York Post Graduate Medical School and Hospital, Columbia University, New York:

Intranasal Drainage for Cure of Chronic Tear Sac Infection: Exhibit of diagrammatic illustrations of stages of procedure; instruments and demonstration on skull showing suitability of this technic, which is accurately guided by finger palpation at the inner canthus for difficult cases as in (1) narrow or fractured noses, (2) small thick-walled, granulation-filled, adhesion-bound sacs, (3) acutely inflamed sacs with threatening complications securing immediate drainage with the least possible surgical intervention and almost simultaneous sealing of vascular channels; adaptability in reestablishing intranasal drainage in previously excised tear sacs; summary of the advantages of this technic.

MARTIN COHEN, New York Post Graduate Medical School and Hospital, Columbia University, New York:

Chorioretinal Arteriolar Necrosis in Malignant Hypertension: Exhibit of colored drawings of the fundus and reproductions from photomicrographs of the retina, choroid and kidney, with brief legends and an abstract of the case report.

HENRY MINSKY, Mount Sinai Hospital, New York:

The Zonular Chamber of the Eye: Exhibit showing the lens-vitreous system isolated from fresh eyes by removing in saline solution the overlying structures. The vitreous hangs from the suspended lens by means of the zonular membrane's insertion into the vitreous at the hyaloretinal line. Pathologic slides are shown as presumptive evidence of a space being present in life. Final proof is offered of the existence of the zonular chamber by showing its being injected with carmine in fresh human eyes. From one single point of injection a posterior sinus beyond the processes fills up. This communicates by linear channels in the valleys of the ciliary body with the circumlental space. The anterior chamber fills at the same moment, showing that there exists a free opening of the zonular chamber into the posterior chamber. The role of the zonular membrane in accommodation, cataract extraction, detachment of the retina and glaucoma is suggested.

ISOBEL JANOWICH and ELEANOR BROWN MERRILL, National Society for the Prevention of Blindness, New York:

Eye Problems in National Defense: Exhibit of charts indicating industrial and civilian eye problems: (1) danger to eyes in air raids; (2) danger to glaucoma patients because of the unusual emotional stress; (3) illustrative material on eye hazards in industry.

L. VON SALLMANN, JAMES BOYD, EDWARD GALLARDO and PHILLIPS THYGESON, College of Physicians and Surgeons, New York:

Sulfonamide Therapy in Ocular Infections: Exhibit dealing with clinical studies on the treatment of ocular infections with sulfonamide compounds, emphasizing the local use of these compounds in ointment, emulsion and powder form and by iontophoresis. Experimental studies on ocular infections in laboratory animals are summarized.

JACOB GOLDSMITH, Mount Sinai Hospital, New York:

Experimental Intracapsular Cataract Extraction, Suspensory Ligament and Hanover's Canal: Exhibit dealing with further studies into the dynamics of the intracapsular cataract extraction, such as tumbling of the lens, external application of hook inferiorly, separation of lens from vitreous (zonular fibers severed previously) and so forth. Further investigations into Hannover's canal, as contents, structure of its walls and so on. Serial microscopic sections from a normal adult eye and also from a normal adult eye which had undergone an intracapsular extraction (sagittal, transverse and coronal cuts). These sections take up the complete zonule of Zinn and all its closely related structures (lens, vitreous, ciliary body).

Section on Laryngology, Otology and Rhinology

The representative to the Scientific Exhibit from the Section on Laryngology, Otology and Rhinology is Fred W. Dixon, Cleveland.

THOMAS J. COOK, Hospital of the University of Pennsylvania, Philadelphia:

Oral Lesions: Photographs of oral lesions, local in character, such as Vincent's infection and the oral manifestations of such systemic diseases as diabetes, syphilis, lichen planus, tuberculosis, leukemia and vitamin deficiencies.

CHEVALIER L. JACKSON, JOHN V. BLADY and CHARLES M. NORRIS, Temple University Hospital, Philadelphia:

Criteria for Selection of Treatment in Cancer of the Larynx: Exhibit presenting the results obtained in the treatment of a series of cases of cancer of the larynx by surgery and by irradiation since 1930. Demonstration of the criteria by which the particular method of treatment was selected in each of the surgical cases. The following criteria of selection are discussed and evaluated: (1) metastasis, (2) location and extent of lesion, (3) mobility of laryngeal structures, (4) histology and (5) general physical condition of patient. In instances in which recurrence took place an attempt is made to show the reasons for the recurrence and to correlate these data with our present concept of the criteria for the selection of a method of treatment.

ADA M. HILL, American Society for the Hard of Hearing, Washington, D. C.:

Information for the Hard of Hearing: Exhibit giving information on hearing tests for children and adults, lip reading instruction, hearing aids vocational and rehabilitation problems, conservation of hearing program in schools, individual problems of hard of hearing persons and local organizations for persons with impaired hearing.

RAPHAEL SCHILLINGER, Beth Israel Hospital, New York:

The Nasal Sinuses in Allergy: Exhibit of sinus roentgenograms of cases of known allergy, depicting the roentgen signs, the ability of the sinuses to accept contrast medium, the various types of filling characteristics and the ability or inability of the sinuses to empty themselves of the opaque fluid.

PAUL H. HOLINGER, University of Illinois College of Medicine, Chicago:

Photography of Larynx, Tracheobronchial Tree and Esophagus: Exhibit showing the photographic equipment devised to take motion pictures and still pictures of the larynx, tracheobronchial tree and esophagus; transparencies illustrate the normal appearance of the lower air and food passages and certain of their pathologic states; charts illustrate the technic of photography through the laryngoscope, bronchoscope and esophagoscope.

MAX CUTLER, LOUIS M. ROSENTHAL, E. VALENCIA and JAMES B. IRWIN, Chicago Tumor Institute, Chicago:

Concentration Radiotherapy for Cancer of the Mouth, Pharynx and Larynx: Exhibit presenting a new principle of radiotherapy known as the "concentration method," which has proved to be more effective in the radioresistant forms of cancer of the mouth, pharynx and larynx than the methods of external radiation now generally used; the clinical material on which the studies are based consists of some 850 cases of cancer of the mouth, pharynx and larynx from the Chicago Tumor Institute and the Veterans Administration Facility at Hines, Ill; the principles, technic and results are illustrated by typical cases.

Section on Pediatrics

The representative to the Scientific Exhibit from the Section on Pediatrics is Arthur F. Abt, Chicago.

KATHERINE BAIN, Children's Bureau, United States Department of Labor, Washington, D. C.:

Maternal and Neonatal Mortality, United States, 1930-1940: Exhibit of charts and pictographs showing rates, trends and causes of maternal and neonatal mortality in the United States.

RALPH BOWEN, Houston, Texas:

The Story of the Asthmatic Child: Exhibit presenting the allergic child and his experiences from infancy to juvenile life, stressing diagnosis and differentiation of asthma; something specific about foods; complete discussion as to therapy, environmental factors, role of infection and psychologic situations.

LOUIS H. BARENBERG, DAVID GREENE, WALTER LEVY and NATHAN GREENSTEIN, Morrisania City Hospital, New York:

Prevention of Contagion in Pediatric Wards with the Use of Human Serum or Plasma: Exhibit presenting (1) the technic of our procedure and (2) the results obtained in our hospital compared with those obtained in other hospitals in a series of studies over a period of seven years on the subject of prophylaxis against contagious disease in pediatric wards by means of human serum or plasma.

MARTIN M. MALINER and HENRY BOROW, Post Graduate Hospital, New York:

Congenital Heart Defects—Simplifying the Clinical Differential Diagnosis of the Most Common Types: Exhibit of clay models showing development of the fetal heart with defects as they occur, including two types of cyanotic (pulmonary stenosis and large septal lesion) and two types of acyanotic (patent ductus arteriosus and patent septum); charts show the pathologic changes and physiology of the different lesions; posters give simple differential data; electrocardiograms and stethograms of the lesions with recordings of common type murmurs and photographs of congenital conductive disturbances (complete heart block, right bundle-branch block, left bundle-branch block).

JOSEPH FELSEN and WILLIAM WOLARSKY, the Bronx Hospital, New York:

Prevention and Treatment of Infectious Diarrhea of the Newborn with Lyophile Plasma and Sulfathiazole: Exhibit of charts dealing with studies made of an outbreak among 108 newborn infants in which 19 infants were affected, chiefly premature infants weighing from 3 pounds 11 ounces to 6 pounds (1,672 to 2,722 Gm.). None of those receiving prophylactic therapy contracted the disease. No mortality occurred among the babies who had contracted infectious diarrhea of the newborn and were treated with plasma-sulfathiazole. Limited but significant controls are shown. Epidemiologic, bacteriologic, serologic and experimental studies are presented.

J. HARRY MURPHY, Creighton University School of Medicine, Omaha:

Tuberculosis in Children: Exhibit of charts and graphs showing epidemiology of tuberculosis among children. Graphs dealing with survey in Omaha on the incidence of tuberculosis to the extent of approximately one tenth of the population; incidence of bovine tuberculosis found in Omaha packing plants; gross pathologic specimens of various tuberculous lesions found in children representing both primary and reinfection types; charts demonstrating extrathoracic lesions based on objective findings, operative or autopsy evidence.

Section on Experimental Medicine and Therapeutics

The representative to the Scientific Exhibit from the Section on Experimental Medicine and Therapeutics is Dwight L. Wilbur, San Francisco.

MILTON G. SCHMITT, Northwestern University Medical School, Chicago:

Treatment of the Pathology of Inflammation by Electromagnetic Induction: Exhibit of roentgenograms and photographs presenting representative cases comprising inflammatory conditions of traumatic and infectious origin treated by electromagnetic induction, including carbuncle, cellulitis of the face, infected hand with lymphangitis, nonunion of tibia and fibula (nine months' standing), osteomyelitis of tibia (postoperative treatment) and pneumonitis. The principles on which the technic is based are portrayed and explained by charts and diagrammatic illustrations, presenting a new concept of treatment whereby conditions heretofore considered contraindications may be safely and successfully treated.

WILLARD O. THOMPSON, NORRIS J. HECKEL and RICHARD F. MORRIS, University of Illinois College of Medicine, and Presbyterian Hospital, Chicago:

Endocrine Regulation of Growth: Exhibit showing variations from the normal in growth associated with hypofunction and hyperfunction of glands of internal secretion, with special emphasis on stimulation of growth with chorionic gonadotropin and sex hormones. Except for thyroid in patients with childhood myxedema, chorionic gonadotropin and male sex hormone are the most potent stimulators of growth available at present; they stimulate not only the growth of the skeleton but also the growth of every tissue in the body, in particular the musculature; they are general growth stimulators.

JOSEPH F. ROSS and MILAN A. CHAPIN, Evans Memorial and Massachusetts Memorial hospitals, Boston:

Application of Radioactive Isotopes to Medical Investigation: Exhibit illustrating the nuclear reactions occurring in the formation of radioactive isotopes and the principles of their production in the cyclotron, demonstrated with photographs and diagrams. Radioactive isotopes will be made artificially in the exhibit and the methods of detection of such "tagged" material will be demonstrated with a Geiger-Muller tube and counter. Application of the radioactive tracer technic to medical problems will be illustrated, particularly in reference to iron metabolism in human subjects. The path of radioactive iron in the body will be traced from ingestion until incorporation in the hemoglobin molecule.

WILLIAM DRESSLER, Israel Zion Hospital, Brooklyn, and the Brooklyn Hospital, New York:

Cardiac Topography and Physical Diagnosis of the Heart: Exhibit of drawings and photographs demonstrating (1) the anterior wall of the heart, which is the chief object of physical examination, and its topographic relationship to the anterior chest wall in various pathologic conditions; (2) a simple method of percussion aimed at finding abnormal areas of definite dulness rather than percussing the outlines of the heart, and the results of percussion in relation to cardiac topography; (3) significant palpatory findings in relationship to cardiac topography; (4) the diagnostic value of observation of the venous pulse with the unaided senses.

L. EMMETT HOLT JR. and VICTOR A. NAJJAR, Johns Hopkins Hospital, Baltimore:

Simple Methods for the Determination of Early Deficiencies of Thiamine, Riboflavin and Nicotinic Acid: Exhibit consisting of a rotating display chart giving the background and advantages of the new procedure for assaying early vitamin B deficiences; fluocomparator designed by the exhibitors, which permits the average doctor with simple laboratory facilities to make assays of these vitamins by fluorescent methods without the aid of expensive electrical apparatus. Charts will describe the advantages of this instrument.

J. H. WEATHERBY and H. B. HAAG, Medical College of Virginia, Richmond.:

Factors Influencing Skin Temperature: Exhibit of graphs illustrating changes in skin temperature of the fingers and toes as affected by various pharmacologic and physiologic influences such as smoking, reading, talking, drinking (cold bev-

erages) and sleeping. Many of these factors induce changes in temperature of considerable magnitude. Such factors must be taken into account in the proper clinical evaluation of skin temperature changes. The experiments were done on a total of 24 healthy male and female subjects under controlled conditions, a suitable thermopile being used for recording the skin temperature.

HENRY R. KREIDER, Chemical Laboratory, American Medical Association, Chicago:

Recent Advances in the Chemistry of Synthetic Hormones, Gastric Antacids and Vitamin K: Exhibit of charts and posters presenting a description of the chemical relationship and properties of the synthetic hormones; the natural and synthetic vitamin K active compounds; the substances which are used to counteract excessive gastric acidity in treatment of ulcers.

C. C. LITTLE, SAMUEL BINKLEY and H. D. FISH, American Society for the Control of Cancer, New York:

Value of Cancer Research with Mice: Exhibit of artificial stone, bas-relief plaques and color drawings emphasizing two main points: (1) the nature of the cancer process, illustrating the basic nature of growth in normal and cancerous tissue and means of control and propagation; (2) the nature of the material showing the advantages of uniform strains, ability to fix characteristics and provide in quantities, speed of reproduction and resemblance to human beings, furnishing a comparative basis for the extension of results.

A. G. DE SANCTIS, VINCENT DE PAUL LARKIN, MARTIN GREEN and PAUL DI ST. AGNESE, New York Post Graduate Hospital, New York:

A Survey of 2,000 Cases of Otitis Media and Mastoiditis in Children: Exhibit presenting the changing picture of otitis media and mastoiditis over a ten year period, with special reference to the amazing results of chemotherapy in the past four years. A year by year breakdown of the important symptoms and physical signs as well as the pertinent laboratory data and complications of the last 1,000 cases of otitis media and mastoiditis is presented to show that there has been no significant change in the virulence of the disease but that modern methods of therapy are responsible. The normal yearly variation in the incidence of these two conditions is presented. Roentgenograms show the changes in mastoiditis under the influence of chemotherapy.

ASHER CHAPMAN and S. F. HAINES, Mayo Foundation, Rochester, Minn.:

Some Relationships of the Thyroid and Pituitary Glands to Iodine Metabolism: Exhibit demonstrating results obtained in a study of certain thyroid pituitary relationships in experimental animals; data showing that iodine in the thyroidless animal has a significant effect on growth and basal metabolic rate; evidence indicating that the thyroid may respond to the stimulus of low iodine in the absence of the pituitary gland; photomicrographs of pituitary glands demonstrate that different iodine levels in the body may effect the hypophysial cytology in the absence of the thyroid gland.

HARRY KOSTER and BRUNO KISCH, Crown Heights Hospital, Brooklyn:

Some Physiologic Aspects of Spinal Anesthesia: Exhibit showing the mechanism and the factors which govern the spread of the anesthetic in the subarachnoid space; the immediate absorption into the blood stream of the anesthetic is demonstrated, as is also its powerful depressor effect on cardiac muscle; the enzymatic changes that procaine hydrochloride undergoes in the blood stream with its conversion into innocuous substances are followed and the quantitative recovery in the urine is demonstrated; evidence which properly places the responsibility for the fall in blood pressure is presented, and the mechanism by which death may be produced or avoided is described.

GEORGE M. HIGGINS and RAY D. WILLIAMS, Mayo Foundation, Rochester, Minn., and ARTHUR GATZ, Carleton College, Northfield, Minn.:

Reactions in Young Rats Fed Human Diets Low in the Vitamin B Complex: Exhibit showing results of study in young rats fed human diets low in vitamin B complex. Recent surveys of food purchases by populations of the United States as well as other investigations of American diets showed that many families were consuming "poor" diets. Owing to their content of highly milled white flour and refined sugar, these diets failed to supply a satisfactory allowance of thiamine, riboflavin and nicotinic acid. Human diets composed of foods commonly appearing on American tables were prepared. They were adequate in vitamins A, C and D but were made to contain thiamine, riboflavin and nicotinic acid in amounts approximating those found in the "poor" diets of human beings in the surveys. The B fractions were added to the patent flour, from which the breads of the various diets were made. These diets were fed to young rats.

E. FULLERTON COOK, JOHN N. MCDONNELL, ADLEY B. NICHOLS and HARVEY P. FRANK, U. S. Pharmacopeial Convention, Philadelphia:

United States Pharmacopeia, Twelfth Revision: Exhibit of charts and specimens presenting the items now official in the new Twelfth Revision of the Pharmacopeia.

WILLIS C. BEASLEY, United States Public Health Service, National Institute of Health, Bethesda, Md.:

Evaluation of Technical Factors in Fluorography: Exhibit of materials and instruments developed for this investigation illustrating procedures employed and quantitative results obtained from an intensive clinical and technical study of the relative diagnostic value of 35 mm. and 4 inch by 5 inch fluorograms, and ones of intermediate size. Influences of the following technical factors on the diagnostic quality of miniature fluorograms are demonstrated: nature of roentgen ray generator, fluorescent screen, photographic lens, film size, image size, film emulsion, processing of films, methods of optical systems for viewing films, anode-screen distance and roentgen ray exposure factors. Special attention is given to the advantages of correct stereoscopic procedures over single films in diagnostic reading of miniature fluorograms.

ERICH KRUEGER and KLAUS UNNA, Post Graduate Medical School, New York, and Merck's Institute, Rahway, N. J.:

Comparative Studies on the Toxic Effects of Digitoxin and Ouabain: Exhibit presenting experiments on cats which furnish evidence of qualitative differences between ouabain and digitoxin in their effect on heart rate and cardiac rhythm at different percentages of their total lethal doses. Ouabain was found to exert a stronger effect on the vagus. After ingestion of atropine a significant difference between the two drugs was not present. In these experiments use was made of the newly developed heart beat counter, which permits continuous recording of the heart rate and also observations on the electrocardiogram.

E. F. KELLY, American Pharmaceutical Association, Washington, D. C.:

National Formulary Preparations: Exhibit of National Formulary Preparations of interest to prescribing physicians; examples of preparation of therapeutic importance representing convenient and satisfactory dosage forms, of vehicles designed to aid the physician in prescribing attractive and palatable prescriptions and of materials and preparations for use in the clinical laboratory.

DAVID ADLERSBERG, Mount Sinai Hospital, New York:

Fat and Vitamin A Absorption in Sprue and Sprue-like Conditions: Exhibit showing that the fat tolerance test represents a reliable gage of the absorptive capacity of the intestinal tract. Case histories, roentgenograms and graphs illustrate the relationship between the severity of the case, the clinical course, results of therapy and the behavior of the fat absorption test.

The test permits in some cases the differentiation between sprue and jejunoileitis. The absorption of vitamin A usually parallels fat absorption.

JOHN E. LEACH and JOSEPH H. FARROW, Memorial Hospital, New York:

Effect of Roentgen Rays on the Heart and Lungs: Exhibit presenting an experimental and clinical study of the effects of high voltage roentgen rays on the heart and lungs. The experimental studies include diagrams and photomicrographs of the early and late results of irradiating rat hearts. The clinical study shows the anatomic and physiologic disturbances occurring in the cardiopulmonary system when different types of extrinsic and intrinsic neoplastic diseases of the thorax are treated by high voltage roentgen rays. This study particularly emphasizes changes in the blood pressure, cardiac arrythmia, respiratory physiology and electrocardiograms.

DAVID B. FISHBACK, Jewish Hospital, Philadelphia:

A New Objective Circulation Time Test (Fluorescein Method): Exhibit showing the method demonstrated in rabbits by injection of 10 per cent sodium fluorescein intravenously. A portable ultraviolet lamp with a Wood filter is directed toward the rabbit's eye; the time from injection of the dye until the appearance of a brilliant yellow in the iris and the lower palpebral conjunctiva denotes the circulation time; the average time in rabbits is five to six seconds. The effect of certain drugs on the circulation time of the rabbit will be shown on charts. Since the text of this circulation time is objective, it is of particular advantage in comatose, anesthetized, mentally ill and moribund patients, 3 cc. of 20 per cent sodium fluorescein being injected intravenously. This test has been done in several hundred human cases; in normal cases and in compensated cardiac disease seven to fifteen seconds and in cardiac decompensation sixteen to forty-five seconds.

CHARLES I. SINGER, Long Beach Hospital, Long Beach, N. Y.

Thalassotherapy: Exhibit of drawings, graphs and charts depicting the biologic effects of seashore climate in the human being and the rationale of its therapeutic indications and contraindications.

ASHER WINKELSTEIN, FRANKLIN HOLLANDER and ALBERT CORNELL, Mount Sinai Hospital, New York:

Drip Therapy of Peptic Ulcer: Exhibit showing the physiologic and psychologic bases of the various drip therapies; curves of neutralization of gastric acidity by the milk-soda drip and by alumina gel drips; a new apparatus used for the more usual alumina drips. Therapeutic results, modes of therapy and instructions for drip therapy will be presented, with a summary of ten years' experience with this new form of ulcer therapy.

DONALD SLAUGHTER and F. T. WRIGHT, Baylor University College of Medicine, Dallas, Texas:

A Quantitative Pain Threshold Machine: Exhibit showing how the original Wolff-Hardy Goodell machine has been modified to the extent that measurements of pain threshold in man are recorded as the degrees of centigrade temperature necessary to cause pain. This arrangement prevents any changes in the air currents circulating in or around the machine from altering the final reading at any one time. Such a precaution enables the operator of the machine to record the temperature the instant that pain is experienced by the subject and obviates the necessity of moving the subject away from the machine in order to make a thermocouple reading. It also corrects the problem of filament blackening of the lamp that is used as a source of heat pain, since the pyrometer readings are calibrated so that they represent certain degrees of centigrade temperature. The experiments performed on this machine consist of comparing various doses of opiates with and without 0.5 mg. of prostigmine methylsulfate.

Section on Pathology and Physiology

The representative to the Scientific Exhibit from the Section on Pathology and Physiology is Frank W. Konzelmann, Philadelphia.

FRANK W. HARTMAN, VICTOR SCHELLING, HENRY N. HARKINS, BROCK BRUSH and KENNETH W. WARREN, Henry Ford Hospital, Detroit:

Relative Value of Pectin Solution in Shock: Exhibit showing a comparative study of blood substitutes, including pectin solution, in the prevention and treatment of shock. Data obtained from the treatment of experimental shock in animals with pectin solution and the use of the solution in prevention and treatment of shock in about 100 clinical cases are presented. The physical and chemical characteristics of pectin, along with the method of preparation of the solutions and tests for their safety in intravenous therapy, are illustrated.

MAX M. STRUMIA and JOHN J. MCGRAW, Bryn Mawr Hospital, Bryn Mawr, Pa.:

Preparation and Preservation of Human Blood Plasma: Exhibit showing all steps from bleeding of donors to final product, particularly the preservation in the frozen state, shell freezing and drying from the frozen state. The latter is accomplished with a new type of condenser which employs relatively high temperatures such as are readily obtained with standard small commercial refrigerating apparatus.

JOSEPH M. HILL, E. E. MUIRHEAD and LEWIS WATERS, Baylor University Hospital, Dallas, Texas:

Shock Therapy: Exhibit showing the rationale of hypertonic plasma protein therapy by demonstration of increased blood volume under various experimental conditions in dogs and human beings. Special emphasis is placed on water partition in shock and its shift to more normal distribution after hypertonic plasma therapy.

ISRAEL DAVIDSOHN, Mount Sinai Hospital, Chicago:

Blood Groups: Application in Clinical Medicine and in Medical Jurisprudence: Exhibit of a model demonstrating the blood grouping reactions, which visitors may work and observe for themselves; demonstration of the microscopic hemagglutination phenomenon; charts presenting the present status of knowledge of blood groups and their practical applications.

ERNEST E. AEGERTER and HENRY W. ZWERLING, Temple University School of Medicine and Hospital, Philadelphia:

Hodgkin's Disease: Exhibit presenting the essential features of the theories of etiology, symptomatology, clinical course, roentgen therapy and histopathology of the various types of Hodgkin's disease. These types include Hodgkin's disease of the mediastinum, retroperitoneum, lungs, gastrointestinal tract, skin, bone and brain.

ROBERT B. GREENBLATT, University of Georgia School of Medicine, Augusta, Ga.:

Testosterone Propionate Pellet Implantation in Gynecic Disorders: Exhibit of drawings illustrating the technic of implanting pellets of testosterone propionate subfascially in patients with (*a*) menorrhagia (*b*) dysmenorrhea (*c*) menopausal syndrome (*d*) fibromyomata uteri (*e*) nocturnal frequency or (*f*) sexual frigidity; charts showing the doses required in various gynecic disorders; graphs showing the rate of pellet absorption; photomicrographs of microscopic studies of the endometrium and the vaginal smear before and after implantation as well as the histopathology of tissue changes about the pellets; photomicrographs of sections of the vagina taken for biopsies and stained especially for glycogen illustrate that implantation of pellets in a moderate dose does not interfere with glycogen deposition.

GONZALO ESGUERRA GOMEZ, Clinica de Marly, Bogota, Colombia:

Bone Changes in Leprosy: Exhibit of roentgenograms showing bone changes in leprosy.

ANNE SHIRAS and ALBERT LEVIN, Biological Photographic Association, Pittsburgh:

Medical Photography: Exhibit of prints and transparencies illustrating the use of photography in various branches of medicine. Complete descriptions of technic are available. A scientific photographer qualified to discuss problems of medical photography will be in attendance at all times. The pictures shown were submitted by a number of photographers, members of the National Biological Photographic Association.

ELAINE P. RALLI, KARL PALEY and SEYMOUR RINZLER, New York University College of Medicine, New York:

Human Liver Lipids in Health and Disease—An Analysis of 120 Human Livers: Exhibit of charts showing graphically the distribution of fat in the human liver in health and disease; analysis of 25 normal livers and 95 livers of patients dying from cirrhosis of the liver, acute and chronic infections, heart disease, diseases of metabolism and malignant diseases, also cases in which the plasma lipids were analyzed before death and the liver lipids were analyzed after death; photomicrographs of the pathologic livers.

NORBERT ENZER, ERNST SIMONSON and SAMUEL BLANKSTEIN, Mount Sinai Hospital, Milwaukee:

Investigations of Sensory and Motor Centers in Fatigue and Disease: Exhibit showing that because the fusion frequency of flicker is a fundamental visual function and is an indicator of the excitability of visual centers, it was used to study some of the central nervous system factors in fatigue and general disease: charts show that the fusion is diminished in normal fatigue of the central nervous system; patients with cardiac disorders and hypothyroidism were found to have depressions of the fusion; the fusion was found to rise as fatigue was relieved; amphetamine, desoxyephedrine, vitamin B complex surplus raised the fusion in normal states; methyltestosterone achieved the same results in hypogonadism. Charts demonstrate fatigue of the motor centers in normal states and in disease and the effect of amphetamine and desoxyephedrine.

EMMERICH VON HAAM, A. F. PREBUS and MARY SCHUH, Ohio State University, Columbus, Ohio:

Supramicroscopy: Exhibit demonstrating studies of cytologic details in the electron microscope; survey over the possible uses of this instrument in medicine; photomicrographs of thrombocytes, mitochondria, chromosomes, bacteria, viruses and biologic colloids.

S. E. GOULD, Eloise Hospital, Eloise, Mich.:

Subclinical Trichinosis: Exhibit of photographs and drawings illustrating diagnostic tests for trichinosis during life and methods of recovery of Trichinella spiralis at autopsy. The results of cutaneous tests and precipitation tests with one or more trichina antigens and of blood counts for eosinophilia are correlated with the finding of Trichinella larvae at autopsy in several hundred persons.

W. J. MACNEAL, MARTHA JANE SPENCE and ARTHUR C. ALLEN, New York Post Graduate Medical School and Hospital, New York:

Comparative Study of the Lesions of Clinical and Experimental Endocarditis: Exhibit of gross specimens and photographs and photomicrographs of the lesions in the heart and in other organs in human viridans endocarditis and in the experimental infection produced by inoculation in rabbits.

WILLIS S. KNIGHTON and MARK J. SCHOENBERG, Glaucoma Committee of the National Society for the Prevention of Blindness, New York:

Glaucoma: Exhibit of charts, photographs, drawings and specimens presenting the subject of glaucoma for the general practitioner and the ophthalmologist.

CARLOS MONGE, Faculty of Medicine, University of San Marcos, Lima, Peru:

Exhibit dealing with research work in the university.

O. IVANISSEVICH, University of Buenos Aires, Buenos Aires, Argentina:

Hydatid Cysts: Exhibit indicating the importance of the disease in the province of Buenos Aires.

JOHN A. SAXTON, Cornell University Medical College, New York, and C. M. MCCAY, GLADYS A. SPERLING and LEROY L. BARNES, Laboratory of Animal Nutrition, Cornell University, Ithaca, N. Y.:

Relation of Chronic Nephrosis, Chronic Pneumonia and Neoplastic Diseases of Albino Rats to Age and Modification of Diet: Exhibit showing experiments on the relation of diet and growth rate to the life span and to common spontaneous diseases of albino rats. The exhibit demonstrates the pathology and, so far as possible, the pathogenesis of chronic nephrosis, chronic pneumonia and neoplasms of rats. The frequency of these diseases in relation to age and to the diets employed is shown in tabular form. The analyses lead to the conclusion that modifications of diet and growth rate may modify the development of spontaneous diseases in the rat and in this way affect the average life span.

LALL G. MONTGOMERY, CARLITA R. SWENSON, American Society of Clinical Pathologists, Ball Memorial Hospital, Muncie, Ind., and GRANT FAVORITE, Philadelphia:

The Pathologist: Contributions to American Medicine: Exhibit illustrating the many ways in which the pathologist takes his place in the community in which he works; the many contributions that he makes to national medicine as an individual and through the American Society of Clinical Pathologists, and how important a role he plays in the maintenance and advancement of the high standards of American medicine.

CARLOS CHAGAS, Faculty of Medicine, University of Rio de Janeiro, Rio de Janeiro, Brazil:

Epidemiologic Studies on Malaria and Chagas Disease in Brazil: Exhibit showing work carried out by the Service de Estudo das Grandes Endemias (Division for Studies of Endemic Diseases) of the Instituto Oswaldo Cruz, Rio de Janeiro; malaria survey of the Amazon Valley; the survey of Chagas disease in several states; parasitologic studies on Schizotrypanum cruzi.

Research Studies of the Biophysics Laboratory of the Faculdade Nacional de Medicina Rio de Janeiro: Exhibit showing (1) rhythmic properties of tissue culture—technic, results and oscillograms; (2) parasitologic studies in tissue culture—culture of Schizotrypanum cruzi, culture of toxoplasma and micropreparations; (3) qualitative aspects of the electric discharge of the electric eel—oscillograms.

MILTON MENDLOWITZ and ALAN LESLIE, Mount Sinai Hospital, New York:

Clubbed Fingers and Hypertrophic Osteoarthropathy: Exhibit of transparencies describing the production of experimental cyanosis and hypertrophic osteoarthropathy in the dog by anastomosis of the pulmonary artery to the left auricle, and also studies of blood flow and blood pressure in human clubbed fingers.

J. W. CUTLER and FELIX R. PARK, Phipps Institute and Graduate Hospital, Philadelphia:

New Technic for Sedimentation Rate: Evidence showing that lack of a universally accepted technic for recording sedimentation rate has been a serious block to a more widespread adoption of this simple test in general practice; a technic based on the fundamental fact that it is the size of the rouleaux that determines the rate of settling is described; this technic is precise, simple and time saving and embodies principles applicable to all tubes; the results are expressed in simple figures, are easy to interpret and need no correction for anemia; evidence is presented that the 1 cc. Cutler tube is a practical tube for sedimentation rate determination, giving reliable and accurate results under average conditions.

Section on Nervous and Mental Diseases

The representative to the Scientific Exhibit from the Section on Nervous and Mental Diseases is F. P. Moersch, Rochester, Minn.

EBEN J. CAREY and LEO C. MASSOPUST, Marquette University Medical School, Milwaukee:

Experimental Ameboid Motion of Motion of Motor Nerve Plates: Exhibit of specimens, charts and photomicrographs showing that the pleomorphism of the motor nerve plates and muscle striations are experimentally related to physiologic and pathologic functions. By excitation and depression of the nervous system there is demonstrated a correlation between the morphologic structure and the capillary chemistry of muscle and nerve. Periodic bands analogous to cross striations in muscle are experimentally produced by capillary chemical activity in glass tubes. The morphologic evidence of periodic expansion and retraction of motor nerve plates in striped muscle supports the chemical theory for the transmission of the impulse from nerve endings to muscle. Acute starvation results in "inanition block" of nerve impulse with great expansion of axones outside of muscle fiber and retraction and uprooting of nerve branches in motor end plate.

HENRY R. VIETS and ROBERT S. SCHWAB, Massachusetts General Hospital, Boston:

Myasthenia Gravis: Exhibit of charts, photographs, tracings of ergographic and electromyographic records, statistics, the prostigmine test, postmortem studies, thymic gland and endocrine investigations, medical and surgical treatment showing recent progress in the diagnosis and treatment of the disease. The material is brought up to date based on the records from the Myasthenia Gravis Clinic of the Massachusetts General Hospital.

KNOX H. FINLEY and C. MACFIE CAMPBELL, Harvard Medical School and Boston Psychopathic Hospital, Boston:

Electroencephalographic Studies in Neuropsychiatric Disorders: Exhibit showing electroencephalographic tracings compiled from records obtained on more than 4,000 neuropsychiatric patients. Charts show a variety of samples from different neuropsychiatric conditions: schizophrenia, manic depressive disorders, involutional psychoses, behavior problems in childhood and adolescence, neurosyphilis, epilepsy, narcolepsy and other conditions. The charts include samples of tracings followed during the course of a psychosis, including tracings obtained on patients with neurosyphilis before, during and after treatment. Samples of electroencephalographic tracings from experimental studies on animals including the influence of stimulation of the hypothalamus on the electrical cortical pattern are illustrated.

ROBERT V. SELIGER, Johns Hopkins Hospital, Baltimore and MERRILL MOORE, Washington Hospital, Boston:

Treatment of Alcoholism: Exhibit outlining the method of treatment of alcoholism in a modern hospital in which the alcoholic is considered a sick person and is treated accordingly; methods of examination and procedures of therapy; special technics of approaching the alcoholic patient and aiding him in dealing with his problems; psychologic and psychiatric studies and social service methods; special method of handling an alcoholic patient on a farm.

SAMUEL RICHARD ROSEN, Blythewood, Greenwich, Conn., KARL A. FOLKERS, Plainfield, N. J., and KLAUS UNNA, Mountainside, N. J.

Beta-Erythroidine Hydrochloride, Its Pharmacology and Clinical Application to the Control of Metrazol Seizures: Exhibit of botanical and chemical material illustrating the development of the investigation of the Erythrina alkaloids as a background to the pharmacologic and clinical investigations of beta-erythroidine hydrochloride; the clinical use of the drug in the control and mitigation of the seizure induced by metrazol is discussed.

JAMES R. LISA and SIDNEY W. GROSS, City Hospital, Welfare Island, New York:

Brain Tumors in General Postmortem Examinations: Exhibit of brain tumors including many of unusual pathologic interest from the point of view of clinical history, location and histology; during the past several years many brain tumors, silent or unrecognized clinically, have been found during routine general postmortem examinations.

HAROLD C. VORIS and HERBERT LANDES, Mercy Hospital and Loyola University Clinics, Chicago:

Management of the Neurogenic Bladder: Exhibit of cystometrograms and electrocystometrograms that demonstrate the normal and pathologic physiology of the urinary bladder are portrayed with diagrams and actual demonstrations.

Section on Dermatology and Syphilology

The representative to the Scientific Exhibit from the Section on Dermatology and Syphilology is Hamilton Montgomery, Rochester, Minn.

C. GUY LANE and IRVIN H. BLANK, Harvard Medical School, Boston:

Cutaneous Detergents: Exhibit showing classification of cutaneous detergents now available according to their chemical composition; chemical composition of soap; how detergents remove soil from the surface of the skin; the action of detergents (principally soap) on the skin.

ORLANDO CANIZARES, New York:

History, Development and Achievements of Dermatology in Latin America: Exhibit presenting a brief summary of the history, development and present status of dermatology and syphilology in Latin America, each country being studied separately; their most outstanding achievements; textbooks, dermatologic journals and monographs on different subjects of the specialty; pictures, moulages and brief descriptions of the cutaneous tropical diseases and their treatment; pictures of hospitals and medical institutes related to dermatology.

RHODA W. BENHAM and JANE CRAIGHEAD, College of Physicians and Surgeons, Columbia University, New York:

Cultural Characteristics of the Dermatophytes as Influenced by the Culture Medium: Exhibit showing that the composition of culture mediums influences the production of pigment and the development of the characteristic structures by which species of Dermatophytes are identified; there seems no one medium best for identification of all species; a comparison of gross and microscopic characteristics of several important species is demonstrated on various mediums which seem of value in identification.

F. M. DOUGLASS and T. L. RAMSEY, St. Vincent's Hospital, Toledo, Ohio:

Magnesium Silicate Granulomas: Exhibit of photomicrographs of lesions produced by crystals of magnesium silicate (talcum powder); lesions as seen in color by ordinary illumination and the use of polarized light; brief clinical abstracts of case histories.

G. H. FAGET, United States Marine Hospital, Carville, La.:

Leprosy—Clinical Types and Roentgenograms Showing Bone Changes: Exhibit of (1) photographs showing all types of leprosy in their various stages: maculoanesthetic, neural, tuberculosis, lepromatous and mixed; (2) serial photographs showing progress of the disease during the course of years; (3) photomicrographs showing pathology and bacteriology; (4) roentgenograms of hands and feet showing neurotrophic bone absorption occurring in leprosy in different stages of the process.

H. J. TEMPLETON, C. J. LUNSFORD and H. V. ALLINGTON, Oakland, Calif.:

Dermatologic Oddities: Exhibit of photographs of the oddities of the skin—the bizarre rather than the rare dermatoses, such as photographs of "India rubber skin men" rather than a rarity such as lichen ruber moniliformis.

S. WILLIAM BECKER, Department of Medicine, University of Chicago, Chicago:

Cutaneous Melanoblasts as Studied by the Paraffin Dopa Technic: Exhibit of a chart giving directions for performance of the paraffin dopa technic; photographs and photomicrographs of tissue previously treated by levorotatory 3,4-dihydroxyphenyl-alanin for demonstration of pigment-forming cells of the skin; various dermatoses are illustrated.

GEOFFREY WILLIAM RAKE, MORRIS F. SHAFTER, CLARA M. MCKEE and HELEN JONES, Squibb Institute for Medical Research, New Brunswick, N. J.:

Lymphogranuloma Venereum: Exhibit showing the present knowledge of the agent of lymphogranuloma venereum including its morphology, developmental cycle, tinctorial characteristics and antigenic structure; the relationship of the agent to viruses and bacteria and more particularly its relationship to the agents of psittacosis, meningopneumonitis and allied diseases; recent developments in knowledge of the epidemiology of the disease as revealed by new and more sensitive diagnostic tests, with particular bearing on its persistent and latent character; recent observations on the chemotherapy of the disease under experimental conditions.

V. PARDO-CASTELLO and FRANCISCO R. TIANT, University of Havana Medical School, Havana, Cuba:

Leprosy: The Correlation of Its Clinical, Immunologic, Pathologic and Bacteriologic Aspects: Exhibit of photographs of lepromatous, tuberculoid and nonspecific types of leprosy affecting the skin and peripheral nervous system; photomicrographs of cutaneous and nerve lesions of the three pathologic types; photographs and photomicrographs of "lepromin" tests on the skin; posters explaining the correlation between the clinical skin and nerve lesions, the pathologic types, the results of the lepromin test and bacteriologic examinations; special stress is laid on early lesions of leprosy and their diagnosis, with reference also to the histamine test.

R. A. VONDERLEHR and LIDA J. USILTON, Division of Venereal Diseases, United States Public Health Service, Washington, D. C.:

Prevalence of Syphilis Among Selectees: Exhibit of a map showing the prevalence of syphilis among selectees by states and counties.

CHARLES WALTER CLARKE, FRANK C. COMBES, HELEN O. CURTH, ARTHUR GRACE, BORRIS A. KORNBLITH, MURRAY SANDERS and GUSTAV I. STEFFEN, American Social Hygiene Association, New York:

The Minor Venereal Diseases—Lymphogranuloma Venereum, Chancroid and Granuloma Inguinale: Exhibit of charts, photographs and methods used in diagnosis and treatment of lymphogranuloma venereum, chancroid and granuloma inguinale; presenting the latest information with regard to the prevalence, epidemiology, diagnosis and treatment of these three diseases; diseases being especially prevalent in the tropics and subtropics are of considerable importance at the present time by the Army and Navy.

Section on Preventive and Industrial Medicine and Public Health

The representative to the Scientific Exhibit from the Section on Preventive and Industrial Medicine and Public Health is Paul A. Davis, Akron, Ohio.

RAUL F. VACCAREZZA, ALVARO E. BENCE, ALFREDO LANARI, FRANCISCO LABOURT and R. GONZALEZ SEGURA, Catedra de Patologia y Clinica de la Tuberculosis, Buenos Aires, Argentina:

Results Obtained from the Examination of Separate Lungs: Exhibit showing that (1) bronchospireometry of separate lungs, by means of Gebauer's catheter and following the method of Jacobaeus, is an advisable procedure in patients who are submitted to surgical collapsotherapy; (2) residual air has the same chemical composition as alveolar air, provided the extraction is done simultaneously; (3) aspiration of 100 cc. of residual air of a lung produces an atelectatic picture which disappears immediately after reventilation of the lung; (4) the recording of cardiopneumatic movements of separate lungs shows a record closely related to those of auricular activity with a few accidents of ventricular origin, on both sides.

RAUL F. VACCAREZZA and JUAN R. PASO, Catedra de Patologia y Clinica de la Tuberculosis, Buenos Aires, Argentina:

Epidemiology of Tuberculosis in Argentina—Its Influence on the Human Economic Value: Exhibit of charts on tuberculosis mortality in Argentina for the last twenty-five years, according to age and sex groups and to political divisions of the country; comparative values of population, mortality as a whole and tuberculosis mortality during the years 1914 and 1936; ranking of tuberculosis among the principal causes of death in various years and different age groups; the tuberculin average for draftees from different provinces and territories; vital statistics charts on tuberculosis mortality in the city of Buenos Aires for the years 1914 and 1936 (census years); curve showing the human economic value in Argentina and incidence of tuberculosis and cancer on the same.

WILLARD MACHLE, E. W. SCOTT and E. J. LARGENT, Kettering Laboratory, College of Medicine, Cincinnati:

Fluoride Metabolism: Exhibit showing results of balance study of the normal fluoride intake and of high amounts added to the diet of the human subject, summarized in charts and graphs, accompanied by related information showing sources and distribution of fluoride; results of an animal feeding study presented in roentgenograms, photographs and photomicrographs.

BERTRAM P. BROWN and KARL F. MEYER, State Department of Public Health, San Francisco:

Bubonic Plague—Field Work and Control: Exhibit showing that plague is endemic on the Pacific slope, where it is demonstrated chiefly in ground squirrels and their fleas. Human outbreaks, bubonic and pneumonic, have occurred in California in 1900, 1907-1908, 1919 and 1924-1925; sporadic cases have occurred during intervening years. Incidence, distribution, field and laboratory activities, specimens of ground squirrels and other rodents that are involved in the distribution of the disease, pathologic specimens, slides and the like are shown.

REGINALD FITZ and ANNA C. HOLT, Harvard Medical School Library, Boston:

"Something Curious in the Medical Line"—History of Smallpox Vaccination: Exhibit portraying certain curious features of the introduction of vaccination into America, showing that the beginning of a task so vital to our national health as the prevention of smallpox depended largely on the friendship between two doctors who never met.

NATIONAL DEPARTMENT OF HEALTH OF BRAZIL, Service of Studies and Investigations of Yellow Fever, Rio de Janeiro, Brazil:

Yellow Fever in Brazil: Exhibit of maps showing known occurrence of yellow fever, 1930-1941; places in which epidemiologic studies on yellow fever have been made; areas in which mass vaccination against yellow fever has been done; studies of distribution of immunity to yellow fever for determination of past epidemics; localities with a representative authorized to collect liver specimens; places in which antimosquito services operated during 1941; original distribution of Aedes aegypti; known distribution of Aedes aegypti, last quarter 1941.

NATIONAL DEPARTMENT OF HEALTH OF BRAZIL, Malaria Service for the Northeast, Rio de Janeiro, Brazil:

The Story of the Eradication of Anopheles (Myzomyia) Gambiae from Brazil: Exhibit of maps showing the spread and retraction of Anopheles gambiae and of the area surveyed for its possible extension; photographs of the terrain, breeding places, technic employed and the like; charts showing the number of adults and larvae found each month, indicating that in some divisions these mosquitoes have not been found for more than two years, while in the last division cleaned, they have not

been found for more than one year; chart showing the number of persons treated for malaria, by months; chart showing the personnel employed, by months and by divisions.

CARL M. PETERSON, Council on Industrial Health, American Medical Association, Chicago:

Physical Examinations in Industry: Exhibit of charts, posters and other illustrative material designed to acquaint the private practitioner with the scope, technics and results of preemployment and periodic health services in industry.

CARL F. JORDAN and IRVING H. BORTS, Iowa State Department of Health, Des Moines, Iowa:

Brucellosis or Undulant (Malta) Fever: Exhibit showing photographs of farm animals in a rural setting; charts to indicate distribution of reported cases according to occupation, month of onset, age and sex; reported incidence in Iowa as compared with other states; study of Bang's disease and a major milk-borne outbreak caused by Brucella of porcine type; consideration of symptomatology, laboratory diagnostic procedures, pathology and therapeutic and control measures.

JOHN C. BUGHER and MANUEL ROCA-GARCIA, Section of Special Studies, National Department of Health, Bogota, Colombia:

Epidemiology of Jungle Yellow Fever: Exhibit of charts, photographs and mounted specimens of animals showing the essential characteristics of jungle yellow fever and the mechanism by which it is spread among the animals of the jungle. The means by which the virus may be conveyed to man and the clinical characters of the disease are demonstrated.

HUGO J. D'AMATO, National Department of Health of the Argentine Republic, Buenos Aires, Argentina:

Activities of the National Department of Health of the Argentine Republic: Exhibit showing health activities in Argentina as follows: (*a*) General Malaria Service: maps showing infected zones and percentage of infected persons and treatments; designs and photographs of automatic siphon with intermittent discharge; educational poster. (*b*) Division of Maternal and Infant Welfare: graphs showing maternal and infant mortality and morbidity; functional sketch of a child health center. (*c*) Bacteriologic Institute: diagnosis of diphtheria. (*d*) Section of Hygiene: chart with clinical classification of congenital heart lesions. (*e*) Leprosy: photographs of sanatorium colonies in operation.

JAMES S. MCLESTER, NORMAN JOLLIFFE, T. D. SPIES, R. M. WILDER and F. C. BING, Council on Foods and Nutrition, American Medical Association, Chicago, and Food and Nutrition Board, National Research Council, Washington, D. C.:

Dietary Deficiency Diseases: Exhibit of charts and pictures, together with informal discussion, of signs, symptoms and treatment of dietary deficiencies.

HUGH S. CUMMING, Pan American Sanitary Bureau, Washington, D. C.:

Public Health in Latin America: Exhibit of drawings, maps and photographic montages representing (1) extent of library of Pan American Sanitary Bureau and medical journalistic production of Latin America; (2) field services of the Bureau; (3) some Latin American hospitals and institutions; (4) present status of plague in Latin American ports and its almost complete eradication; (5) increase in recent years of national funds allotted for public health work in Latin America; (6) the international reporting of communicable diseases to and from the Pan American Sanitary Bureau; (7) the drop in smallpox and general death rates in Latin America; (8) outstanding medical contributions of Latin America.

HAROLD W. SMITH, Bureau of Medicine and Surgery, Navy Department, Washington, D. C.:

The Medical Department of the United States Navy: Exhibits of charts, posters, photographs and moulages presenting various aspects of the activities of the Medical Department of the Navy. Photofluorographs will be shown with a photofluorography machine in operation.

Section on Urology

The representative to the Scientific Exhibit from the Section on Urology is John H. Morrissey, New York:

EDWARD O. FINESTONE, Harlem Hospital, New York:

A New Concept of Urinary Extravasation: Exhibit of charts, posters and photographs showing a new concept of the pathogenesis and treatment of urinary extravasation. As a result of this new concept the mortality was definitely diminished and the operative results were accomplished without mutilation. Experiments consisted of the controlled injection of Colles' pouch with radiopaque colored fluids followed by serial roentgen rays and dissection. Clinical studies were based on an intimate analysis of 32 cases observed during the past ten years.

ROGER W. BARNES, Los Angeles:

Endoscopic Prostatic Surgery—Some Details of Technic: Exhibit of drawings of sagittal sections and cystoscopic views of numerous details of the technic of endoscopic prostatic surgery.

FREDERICK M. ALLEN, OTIS M. COPE and WILLIAM E. YOULAND, New York Medical College, New York:

Renal-Vascular Studies: Exhibit showing new blood pressure methods; influence of diet on blood pressure, size of the kidney and body weight; acute and chronic hypertension with kidney ligations and other procedures; kidneys explanted under skin and outside skin; other functional and morphologic observations.

R. H. RIGDON, University of Tennessee, Memphis, Tenn.:

Renal Lesions Following the Intravenous Injection of Hypertonic Solutions of Sucrose and Dextrose—Clinical and Experimental Observations: Exhibit of charts and photomicrographs of the kidneys from a group of clinical cases given hypertonic solutions of sucrose with intake and output of fluid on 1 patient; renal lesions produced by the intravenous injection of hypertonic sucrose in the rabbit and showing retention of nonprotein nitrogen in the blood. These experimental lesions are similar to those observed in man. Observations on the effect of hypertonic solutions of dextrose on the retention of nonprotein nitrogen and on the kidney of the rabbit are included.

LOWRAIN E. MCCREA, Temple University Medical School, Philadelphia:

Cystoscopic Photography—Its Application in the Practice of Urology: Exhibit of photographs showing many normal and pathologic lesions of the bladder; models showing normal and pathologic lesions observed through the view finder of the original camera; transparencies in color of sagittal sections of the human body, showing the introduction of the cystoscope and the application of the cystoscopic camera.

NICANDRO CHAVEZ, Faculty of Medicine, National University of Mexico, Mexico City, Mexico:

Venereal Disease Control in Mexico: Exhibit of photographs, charts, posters and lantern slides depicting methods of treatment and control of venereal diseases in Mexico.

EUGENE R. WHITMORE, Georgetown University Medical School, Washington, D. C.:

Tumors of the Kidney: Exhibit of photographs and photomicrographs of tumors of the kidney in children and in adults; tumors of the renal pelvis and calices and cortical tumors; discussion of the nature of the different types of kidney tumors; whole organ microsections of the kidney, showing the relation of the tumor to the neighboring kidney tissue, the extension of the tumor and the nature of different portions of the tumor.

Section on Orthopedic Surgery

The representative to the Scientific Exhibit from the Section on Orthopedic Surgery is Jesse T. Nicholson, Philadelphia.

DONALD GUTHRIE and PAUL H. HARMON, Robert Packer Hospital, Sayre, Pa.:

Arthroplasty of Hip with Nonmetallic Foreign Body Cup: Exhibit of photographs, transparencies and roentgenograms illustrating case histories and operative procedures employed in arthroplasty of the hip.

HOWARD A. CARTER and S. PERRY ROGERS, Council on Physical Therapy, American Medical Association, Chicago:

Amputations: Exhibit displaying the work of the consultants on artificial limbs of the Council on Physical Therapy. Preferred sites of election for amputations, the best stump for the most useful prosthesis and acceptable methods for treatment of the stump are considered. Manikins are displayed illustrating satisfactory stumps. A pamphlet will be distributed, dealing with the important aspects of the exhibit.

WILLIAM J. TOBIN, Station Hospital, Fort Benning, Georgia:

Parachute Injuries: Exhibit showing the types of fractures that have been sustained in the training of the paratroops; accurate statistics of the number of jumps, injuries—both minor (contusions, sprains, lacerations and like injuries) and major—fractures and other serious injuries. Conclusions drawn from a survey of the injuries will be included in the exhibit.

BRADLEY L. COLEY and NORMAN L. HIGINBOTHAM, Memorial Hospital and Hospital for Special Surgery, New York:

Skeletal Manifestations of Caisson Disease: Exhibit of charts and photographs presenting the etiology, roentgenology, pathology and differential diagnosis illustrating the features of the skeletal manifestations of caisson disease.

HENRY BRIGGS, New Jersey Orthopaedic Hospital, East Orange, N. J.:

Chip Fusion Following Exploration of the Spinal Canal (Low Lumbar): Exhibit of anatomic specimens showing method of chip fusion following low lumbar exploration of the spinal canal; roentgenograms preoperative and postoperative in a number of cases; charts of statistics following removal of a ruptured nucleus pulposus, spondylolisthesis and other conditions of the low back.

CHARLES GILFILLAN, KENNETH TOWNSEND, ALONZO NEUFELD and G. MOSSER TAYLOR, College of Medical Evangelists, Los Angeles:

Recent Advances in Internal Fixation of Fractures: Exhibit showing a new type of bone plate and bone screws, the technic for its application and various uses and advantages, illustrated by photographs, drawings and skeletal specimens. A new type of self-tapping screw with the plates and a recently developed form of internal fixation for intertrochanteric and subtrochanteric fractures (Neufeld nail). A series of more than 150 cases in which these forms of internal fixation were used are analyzed by means of charts and diagrams.

EARL D. MCBRIDE and WILLIAM K. ISHMAEL, Bone and Joint Hospital, McBride Clinic, Oklahoma City:

Plated Osteoperiosteal Bone Graft: Exhibit of roentgenograms and demonstration of technic of a method of applying a vitallium plate directly over the osteoperiosteal graft across the ununited fracture. The advantages are security; the fact that graft heals firmly to fragments, promotes osteogenesis, can be done in recently infected tissues, often affords graft from same leg, there is no necessity of freshening partially healed fracture, and it saves time.

R. K. GHORMLEY and M. B. COVENTRY, Mayo Clinic, Rochester, Minn.:

Degenerative and Pathologic Changes in Lumbosacral Intervertebral Disks: Exhibit of lumbosacral disks through the various decades of life showing degenerative changes and pathologic specimens of disks which have been removed at postmortem examination.

J. S. SPEED and HAROLD B. BOYD, Willis C. Campbell Clinic, Memphis, Tenn.:

Treatment of Bone Defects with Dual Bone Grafts and Fibular Transplants: Exhibit of roentgen ray prints and photographs illustrating the treatment of severe nonunions, especially those near joints, by means of the dual bone graft; the use of the dual bone graft in the treatment of congenital pseudarthrosis; bridging of defects in bone with fibular grafts following loss of bone substance due to gunshot wounds and compound fractures.

M. B. HOWORTH, New York Orthopedic Hospital, New York:

Evolution of the Spine Fusion: Exhibit of wax models, photographs, roentgen transparencies, specimens, instruments, braces and microscopic slides illustrating the original Hibbs operation with modifications in technic to date, including present technic and application together with postoperative care. The method is used for Pott's disease, scoliosis, fracture, lumbar sacral anomalies and spondylolisthesis, and cases of rupture of nucleus pulposus.

Section on Gastro-Enterology and Proctology

The representative to the Scientific Exhibit from the Section on Gastro-Enterology and Proctology is Grant H. Laing, Chicago.

FREDERICK STEIGMANN, HANS POPPER and KARL A. MEYER, Cook County Hospital, University of Illinois College of Medicine and Cook County Graduate School of Medicine, Chicago:

Liver Function in Clinical Medicine: Exhibit showing that a knowledge of the functional status of the liver is of increasing importance for diagnosis and treatment of various conditions. Pathology and physiology of the liver are demonstrated by charts, photomicrographs and fluorescence microscopy from the point of view of their clinical application. The present role of liver function tests in diagnosis, prognosis and indication for surgical intervention is illustrated and evaluated on the basis of liver biopsies. The indications and the significance of the liver function tests in various clinical conditions are discussed. An attempt is made to show the influence of therapeutic procedures on the liver function.

J. MENENDEZ FEROS, Service of Pedro A. Castillo, University of Havana, Havana, Cuba:

The Electrocardiogastrogram: Exhibit of the electrocardiogastrogram, a new method used to explore the stomach by means of a thin rubber tube which has two electrodes. This is introduced into the stomach and the stomach filled with 400 cc. of a conductor and buffer solution and the electrodes connected to an electrocardiograph. The graphs that are registered vary with the voltage in relation to the pathologic condition of the gastric mucosa; it is low in inflammatory processes and high in normal or pure carcinomatous involvements. This work has been checked up with gastroscopic, radiographic and pathologic examinations.

J. RUSSELL VERBRYCKE JR., Washington, D. C.:

Treatment of Cardiospasm: Exhibit of charts, posters, roentgenograms and lantern slides showing the results of studies based on 654 cases of spasmodic obstruction at the cardia; indications for technic of hydrostatic dilation, with results.

THOMAS N. HORAN and C. GRAHAM EDDY, Eloise Hospital and Harper Hospital, Detroit:

Laparoscopy: Intra-Abdominal Photography in Color: Exhibit consisting of (1) historical review of the development of the instrument and a demonstration of the Swedish model; (2)

demonstration of a newly designed trochar, lamp-housing and spring arrangement for the purpose of taking photographs in color within the abdomen; special high intensity lamps are shown; (3) wash-off relief prints of intra-abdominal photographs in color and Kotavachrome enlargements showing technic of intra-abdominal photography, direct aspiration of bile from the gallbladder, liver biopsy and photomicrographs of biopsy specimens; evaluation of laparoscopic photography as an aid in diagnosis.

MALCOLM R. HILL, E. HAROLD SHRYOCK and F. GEORGE REBELL, College of Medical Evangelists, Loma Linda and Los Angeles:

Role of the Anal Glands in the Pathogenesis of Anorectal Disease: Exhibit consisting of models and photomicrographs representing a study of the development and structure of the anal glands in various age groups, with emphasis on their relationship to anorectal disease.

HENRY A. RAFSKY, Lenox Hill and Beth Israel hospitals, New York:

Intragastric Photography in Conjunction with Gastroscopy: Exhibit of gastrophotographic studies made in a series of patients who presented diagnostic and therapeutic problems. The studies were made in conjunction with the use of the flexible gastroscope. The gastroscope was inserted and the area that was the site of interest was noted. The distance of the depth of the instrument was outlined on the flexible tube to which the camera was attached. The latter was then inserted into this depth. The endoscopic and photographic studies, which were taken mostly in natural colors, were compared to the operative findings as well as the subsequent clinical course. These facts are illustrated by transparencies describing the case reports; the method employed in taking the gastrophotographs is also illustrated.

HAROLD LINCOLN THOMPSON, Los Angeles:

Gastroscopy in Surgery—Results in 250 Cases: Exhibit of charts, photographs, roentgenograms and drawings collected from 250 cases wherein gastroscopy was used in surgical conditions of the stomach.

W. WAYNE BABCOCK and HARRY E. BACON, Temple University Medical School, Philadelphia:

Surgical Treatment of Cancer of the Colon, Rectum and Anus Without Colostomy: Exhibit presenting illustrations, apparatus, moulages, colored slides and photographs and tables illustrating the diagnosis and surgical removal of cancer of the colon and rectum with retention of a perineal anus. The technics of four operations are shown: (1) perineal proctosigmoidectomy, (2) abdominoperineal proctosigmoidectomy, (3) Mikulicz-Paul sigmoidectomy, (4) one clamp end to end method of single stage resection of colon. Preoperative and postoperative treatment. Premalignant and malignant lesions on mechanized turntable viewed through the sigmoidoscope. Indications for and advantages of aspiration. Illustration of advantages of metallic ligatures and sutures.

LOUIS H. CLERF and C. WILMER WIRTS, Jefferson Medical College and Hospital, Philadelphia:

Flexible Tube Gastroscopy: Exhibit of (1) an apparatus containing a Wolf-Schindler flexible gastroscope with a dial that may be turned to give the viewer a picture of the stomach as actually viewed through this instrument; (2) slides of correlated gastroscopic and roentgen studies of a group of patients; (3) a series of drawings made at the time of the original examination through the gastroscope; (4) a series of charts illustrating the findings from the examination of more than 1,500 patients—particularly emphasizing the problem of gastric carcinoma.

Z. BERCOVITZ, R. C. PAGE, H. K. RUSSELL and C. C. FULLER, New York Post-Graduate Medical School and Hospital, New York, and St. Agnes Hospital, White Plains, New York:

Metabolic Studies in Chronic Ulcerative Colitis: Exhibit of charts and graphs showing the results of studies on patients with chronic ulcerative colitis, oral and intravenous dextrose tolerance tests and basal metabolism and respiratory quotient determinations being made simultaneously on some patients. Comparative studies were made with oral dextrose and oral dextrin tolerance tests. Prothrombin clotting time determinations were made with the Russell viper venom modification of Quick's method. Vitamin A and carotinoid blood plasma studies and vitamin C plasma level studies were carried out. Capillary fragility determinations were made in cases of chronic ulcerative colitis and the relationship to vitamin C plasma level and rectal bleeding were studied.

Section on Radiology

The representative to the Scientific Exhibit from the Section on Radiology is S. W. Donaldson, Ann Arbor, Mich.

H. E. KLEINSCHMIDT, National Tuberculosis Association, New York, and S. REID WARREN JR., Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia:

Chest Roentgenograms—Common Technical Errors and Their Correction: Exhibit showing a series of roentgenograms, all of the same chest, illustrating mistakes in technic commonly made, how these faults may lead to error in diagnosis and how to correct them; a pair of stereo films as nearly perfect as can be made with ordinary apparatus.

WILBUR BAILEY, Medical School of the University of Southern California, Los Angeles:

Methods of Treating Hemangiomas: Exhibit comparing the different methods of treating hemangiomas; results from the use of sclerosing solutions, carbon dioxide snow, roentgen rays and beta and gamma rays of radium with special reference to unsatisfactory results; the importance of the depth effect in treating the deeper type of hemangiomas and the usual dosages for all the different methods of treatment are given.

P. L. FARINAS, University Hospital, Havana, Cuba:

Mucosography of the Organs of the Respiratory Tract: Exhibit of roentgenograms demonstrating the internal surface of the mucosa of the respiratory organs after the pulverization of an opaque substance.

LEE A. HADLEY and THEODORE SNOOK, Syracuse University College of Medicine, Syracuse, N. Y.:

Intervertebral Foramens: Exhibit showing wet and dry specimens of the intervertebral foramens, together with roentgen studies and stained sections illustrating both normal and abnormal conditions.

RAPHAEL POMERANZ, Newark, N. J.:

Osteomyelitis of Skull: Exhibit of charts discussing the etiology, types and spread of the disease; transparencies showing serial roentgenographic study of bone changes in osteomyelitis of skull; correlation of the roentgen examination with the clinical course and blood serum findings; differential diagnosis from other infectious diseases of the skull, such as tuberculosis, syphilis and blastomycosis; results of operative and conservative therapy (sulfathiazole) in some of these cases; pictures of specimens with summary and conclusions.

O. V. BATSON, Graduate School of Medicine, University of Pennsylvania, Philadelphia:

The Vertebral Vein System as a Mechanism for the Spread of Metastases: Exhibit of anatomic specimens, serial radiographs, photographs and drawings demonstrating injection

experiments as well as the anatomic extent of the vertebral venous system. Injecting the prostatic vein plexuses in the cadaver, or in the living monkey, fills the vertebral veins and simulates the pattern of spread found in prostatic carcinoma so that without entering the heart or lungs the cervical vertebrae and the brain have been injected in the cadaver. Injections of other anatomic regions show that the vertebral veins, with the veins of the trunk wall and the veins of the head and neck, form a large venous system, the so-called vertebral vein system, which while joining the other venous systems also form a by-pass around them.

FRANK S. DOLLEY and LYMAN A. BREWER, Los Angeles:

Intrathoracic Tumors: Exhibit of neoplasms including those originating from the chest wall, lung and mediastinum, showing the preoperative roentgenogram, preoperative symptoms and history, together with a colored transparency of the neoplasm itself after surgical removal. These tumors include dermoid, teratoma, fibroneuroma, neuroganglioma, fibromyxosarcoma, mediastinal lipomatosis, osteochondroma, osteochondrosarcoma, isolated pulmonary carcinoma, undifferentiated diagnosis, diaphragmatic hernia, coccidioidal abscess and pyogenic abscess.

J. DE CARVAJAL-FORERO, Warner Institute for Therapeutic Research, and JAMES L. MCCARTNEY, New York:

Radiography of Soft Tissues by Monochromatic X-Radiation: Exhibit of roentgenograms demonstrating soft tissues in proportion to their different densities without sacrificing bone detail and density. Bony structures, such as in the pelvis, where the depth is not uniform, are brought out clearly with equal or almost equal density throughout, and yet the soft tissue structures are visualized. Early pregnancies, fibroids and placentas (in pregnancy) are shown. Complete differentiation of skin, subcutaneous tissue, muscular layers, tendinous attachments, vascular and pulmonary structures and bones is possible by this method. Pathologic conditions such as varicose veins, ruptured tendons and subcutaneous tumors can be demonstrated. The method includes darkroom processing in color-forming developers in which the amount of dye deposited on the emulsion is proportional to the actinic activation of the silver at that point.

HENRY K. TAYLOR and TERESA MCGOVERN, Welfare Hospital, Welfare Island, New York:

Angiocardiography: Exhibit showing roentgenographic visualization of the chambers and large vessels of the heart with the aid of contrast substance; the anatomy of the heart and large vessels, location of the heart chambers, variations in the pulmonary circulation, obstructions in the superior vena cava, and collateral circulation; kymographic studies with the differentiation of mediastinal lesions.

CHARLES S. CAPP and MARTHA MOTTRAM, University of California Hospital, San Francisco:

Bone Lesions Involving the Sacrum: Exhibit of roentgenograms, coupled with a short history and important clinical manifestations of more than forty conditions; anomalies, metabolic lesions, primary neoplastic and metastatic neoplastic conditions and unusual fractures.

Section on Anesthesiology

The representative to the Scientific Exhibit from the Section on Anesthesiology is Paul M. Wood, New York.

GEORGE W. JONES, United States Bureau of Mines, and GEORGE J. THOMAS, St. Francis Hospital, Pittsburgh:

Noninflammable General Anesthesiology—Partial Replacement of Oxygen with Helium in Anesthetic Mixtures: Exhibit illustrating the results of the cooperative investigation by the Bureau of Mines, United States Department of the Interior, the St. Francis Hospital of Pittsburgh, the University of Pittsburgh and certain manufacturers of anesthetic equipment for eliminating inflammable mixtures of agents used in anesthesiology by replacing with helium part of the oxygen. Noninflammable anesthetic mixtures containing helium have been routinely administered with highly satisfactory results at the St. Francis Hospital for the past two years. This exhibit is built around the technical work of the Bureau of Mines and practical applications at the St. Francis Hospital.

E. A. ROVENSTINE, HOMER W. SMITH, E. M. PAPPER and S. E. BRADLEY, New York University College of Medicine, New York:

Circulatory Changes During Spinal Anesthesia: Exhibit of charts, drawings and diagrams demonstrating the effects of spinal anesthesia on the circulation. Results of studies on normal man not operated on and studies conducted during clinical anesthesia. Measurements on the nonsurgical series were completed with the ballistocardiograph, the arterial manometer and the electrocardiograph. Certain studies were directed toward the renal circulation with the use of the diodrast and the inulin clearance method.

RICHARD FOREGGER, Wisconsin General Hospital, Madison, Wis.:

Surface Temperature Studies Under Anesthesia: Exhibit of graphs showing the use of skin temperature changes as a means of measuring the increase of peripheral blood flow during anesthesia; normal subjects under pentothal, spinal and inhalation anesthesia, with the resultant skin temperature rise; skin temperature recordings under pentothal, spinal, inhalation and lumbar sympathetic block anesthesia on patients with vascular disease.

PAUL M. WOOD, American Society of Anesthetists, New York:

History of Carbon Dioxide Absorption: Exhibit of models, apparatus, letters and literature showing the history of the development of carbon dioxide absorption for respiratory purposes in anesthesia.

L. H. MOUSEL, H. W. SCHMIDT and A. H. BULBULIAN, Mayo Clinic, Rochester, Minn.:

Causes, Prevention and Treatment of Postoperative Atelectasis: The most frequent pulmonary complications are the result of aspiration of secretions from the nasopharynx during operation. A thorough understanding of the anatomic features and physiologic factors of the larynx and tracheobronchial tree is essential to prevent such complications. Important precautions to be taken preoperatively are emphasized as preventative measures. Treatment should be directed toward securing an adequate endobronchial drainage by means of hyperventilation or bronchoscopy.

HAROLD F. BISHOP, Walter Reed General Hospital, Washington, D. C., and FRED F. RUDDER, Emory University Medical School, Atlanta, Ga.:

Intravenous Anesthesia — Management of Administration: Exhibit of charts and posters showing types of cases, total number of cases, length of operations and amount of drug given (smallest dose, largest dose and average dose to each group of cases); complications: (*a*) time of operation and (*b*) postoperatively; contraindications; results of anesthesia (pentothal sodium). Photographs and drawings of an apparatus so devised that one anesthetist, without assistance, has absolute control over the drug at all times. The drug may be given drop by drop only as needed. Advantages are that (1) the capacity of a 50 cc. syringe allows completion of the majority of operations without its being necessary to refill the syringe; (2) no back flow into the needle is possible, thereby preventing occlusion of the needle by clotting; (3) it allows saline solution,

dextrose solution, plasma and citrated blood to be given through the same needle without disturbing the anesthetic; (4) the apparatus is adjustable in any position.

JOHN ADRIANI, Louisiana State University School of Medicine, New Orleans:

Effect of Anesthetic Drugs on Bronchial Tissue: Exhibit of photomicrographs showing the reactions of excised bronchial tissue of rat, dog and man to anesthetic drugs and the modification of these responses by autonomic stimulating and depressing drugs such as atropine, scopolamine, epinephrine and ephedrine. The drugs used are ethylene, cyclopropane, nitrous oxide, ether, vinyl ether, chloroform, ethyl chloride, tribromethanol, paraldehyde, evipal, pentothal, pentobarbital sodium and other barbiturates, and amylene hydrate.

MOTION PICTURES

Motion pictures will be shown continuously throughout the week in four motion picture theaters adjoining the exhibits. Each picture will be shown once each day.

Practice of Medicine

A. WILBUR DURYEE and GERALD H. PRATT, New York Post-Graduate Hospital, New York:

Large Popliteal Aneurysm—Surgical Repair.

CLAYTON J. LUNDY, Rush Medical College, Chicago:

Heart Beat Mechanism in Health and Disease: Part 9. The Common Digitalis Effects on the Electrocardiograms: Part 10. Axis Deviation.

J. E. F. RISEMAN, Beth Israel Hospital, New York:

Diagnosis and Treatment of Angina Pectoris.

NORMAN PLUMMER and CHARLES WHEELER, New York Hospital, New York:

Sulfonamide Therapy.

GORDON B. MYERS, FRED MARGOLIS and MUIR CLAPPER, Wayne University College of Medicine, Detroit:

Physical Diagnosis.

Surgery

HUGH A. GAMBLE, Gamble Brothers and Archer Clinic, Greenville, Miss.:

Radical Amputation of the Breast with Improved Cautery Technic.

ARKELL M. VAUGHN, Mercy Hospital, Loyola University School of Medicine, Chicago:

High Saphenous Vein Ligation with Retrograde Injection.

GEORGE CRILE JR., Cleveland Clinic, Cleveland:

Thyroidectomy for Diffuse Goiter with Hyperthyroidism.

SAUL S. SAMUELS, Bellevue Hospital, New York:

Treatment of Diabetic Gangrene.

HAROLD L. FOSS, Geisinger Memorial Hospital, Danville, Pa.:

Resection of Right Colon with Primary End to End Anastomosis in One Stage for Carcinoma of the Cecum.

Thyroidectomy in Treatment of Diffuse Goiter with Hyperthyroidism.

Total Hysterectomy.

ALFRED H. IASON, Brooklyn:

Cholecystectomy and Appendectomy for Gangrenous Cholecystitis and Chronic Appendicitis.

Pedicled Fascia Lata Transplant for a Large Postoperative Incisional Hernia in the Right Upper Part of the Abdomen.

Story of Bile: Demonstrating in Animation the Histology and Physiology of the Liver, Gallbladder, Biliary Ducts and Duodenum.

JAMES L. MUDD, St. Louis University Medical School, St. Louis:

Ligation of the Persistent Ductus Arteriosus: Complicated by Streptococcus Viridans Endarteritis with Recovery.

FRANK S. DOLLEY, Los Angeles:

Surgical Technic in Pericardiect[illegible] for Adhesive Pericarditis.

Ligation of Patent Ductus Arteriosus.

Preoperative and Operative Technic in the Care of Lung Abscesses.

Symposium on Surgical Technic

FRANK H. LAHEY and ASSOCIATES, Boston:

Excision of Thyroglossal Cyst.

Esophageal Diverticulum—Lahey Two Stage Operation for Diverticula of the Pulsion Type.

Subtotal Thyroidectomy for Primary Hyperthyroidism.

Excision of Adenomatous Thyroid.

Cholecystectomy and Choledochostomy for Chronic Cholecystitis and Cholelithiasis.

Subtotal Gastrectomy for Chronic, Intractable Peptic Ulcer.

Modified Mikulicz's Resection of the Right Colon for Carcinoma, Two Stage Operation.

Abdominoperineal Resection for Carcinoma of the Rectum, One Stage, Miles.

Abdominoperineal Resection of the Rectum for Carcinoma—Two Stage Operation.

Posterior or Perineal Resection of the Rectum for Carcinoma.

The Removal of an Intrathoracic Goiter.

Orthopedic Surgery

J. E. M. THOMSON and C. FRED FERCIOT, Lincoln, Neb.:

Transportation in Back Injuries.

M. B. HOWORTH, New York Orthopedic Hospital, New York:

Technic of Spine Fusion.

HAROLD B. BOYD, Willis C. Campbell Clinic, Memphis, Tenn.:

Treatment of Bone Defects with Dual Bone Grafts and Fibular Transplants.

DONALD GUTHRIE, Guthrie Clinic, Robert Packer Hospital, Sayre, Pa.:

Arthroplasty of Hip with Nonmetallic Foreign Body Cup.

WILLIAM J. TOBIN, Washington, D. C., and Station Hospital, Fort Benning, Georgia:

Parachute Injuries.

HENRY BRIGGS, New Jersey Orthopaedic Hospital, East Orange, N. J.:

Herniation of a Low Lumbar Nucleus Pulposus; Diagnosis and Treatment by Laminectomy and Chip Fusion.

DEAN H. ECHOLS and GUY CALDWELL, Tulane University of Louisiana School of Medicine, New Orleans:

Sciatic Pain Caused by Ruptured Intervertebral Disk.

Nervous and Mental Diseases

J. RUDOLPH JAEGER, Denver:

Intervertebral Disk (Herniated Nucleus Polyposis).

Abscess of Brain.

Subdural Hematoma.

FREDERICK LEMERE, Shadel Sanitarium, Seattle:

Conditioned Reflex Treatment of Chronic Alcoholism.

A. E. BENNETT, University of Nebraska, Omaha:

Curare as a Diagnostic Test of Myasthenia Gravis.

Horse Serum Neuritis.

S. P. GOODHART, B. H. BALSER and TRACY J. PUTNAM, New York:

Unusual Types of Extrapyramidal Syndromes Including Sequelae of Epidemic Encephalitis.

HAROLD C. VORIS, Loyola University Medical School and the Cook County Hospital, Chicago.

Operative Treatment of Head Injuries.

DAVID J. IMPASTATO and RENATO ALMANSI, New York University Medical School, New York:

Technic and Clinical Manifestations of Electrofit Therapy.

SAMUEL RICHARD ROSEN, Blythewood, Greenwich, Conn.:

Erythrina Paralysis.

Miscellaneous Motion Pictures with Sound

R. A. VONDERLEHR, Division of Venereal Diseases, United States Health Service, Washington, D. C.:

Syphilis: Part I. Diagnosis of Early Syphilis.
Part II. Diagnosis of Late and Latent Syphilis.
Part III. The Management of Syphilis.

DAVID N. W. GRANT, Office Chief of Air Corps, United States Army, Washington, D. C.:

The Physical Examination for Flying.

CHARLES S. WHITE, Washington, D. C.:

The Story of Plasma.

RAPHAEL SCHILLINGER, Beth Israel Hospital, New York:

Nasal Sinusitis.

MALARIA SERVICE FOR THE NORTHEAST, National Department of Health of Brazil, Rio de Janeiro, Brazil:

The Anti-Gambia Campaign in Northeastern Brazil.

JOHN C. BUGHER, Section of Special Studies, National Department of Health, Bogota, Colombia:

Study and Control of Jungle Yellow Fever.

CARLOS CHAGAS, National Faculty of Medicine, Rio de Janeiro, Brazil.

Tissue Culture.

MALCOLM T. MACEACHERN, American College of Surgeons, Chicago:

White Battalions—Serving All Mankind.

GEORGE BAEHR, Office of Civilian Defense, Medical Division, Washington:

Emergency Medical Service for Civilian Defense. (Film slides with sound.)

Miscellaneous Motion Pictures—Silent

HARRY A. TOWSLEY, University of Michigan Medical School, Ann Arbor:

Immunization Against Infectious Diseases.

J. HARRY MURPHY, Creighton University School of Medicine, Omaha:

Tuberculosis in Children.

R. R. PARKER, Rocky Mountain Laboratory, Hamilton, Mont.:

St. Louis Encephalitis in Horses.

THEODORE ROSENTHAL, Bureau of Social Hygiene, Department of Health, New York:

Diagnosis of Gonorrhea in the Male.

FRANCES PASCHER, Skin and Cancer Unit, Post-Graduate Hospital, Brooklyn:

Dermatologic Allergy.

HAROLD W. SMITH, Bureau of Medicine and Surgery, Navy Department, Washington, D. C.:

The Naval Dental Corps.
The Naval Medical Officer.

ABNER I. WEISMAN, Jewish Memorial Hospital, and CHRISTOPHER W. COATES, New York Zoological Society, New York:

A New Test for Pregnancy (The Xenopus "Frog" Test).

FRANK E. SIMPSON, The Simpson Radium Institute, Chicago:

Radon Treatment of Cancer of the Cervix Uteri.

CLARENCE J. GAMBLE, Milton, Mass.:

The Biology of Conception.
Technics of Contraception.

PAUL H. HOLINGER, University of Illinois College of Medicine, Chicago:

Color Cinematography Through the Laryngoscope, Bronchoscope and Esophagoscope.

SAMUEL IGLAUER, College of Medicine, University of Cincinnati, Cincinnati:

Approaches to the Surgical Spaces of the Neck.

HENRY MINSKY, Mount Sinai Hospital, New York:

The Zonular Chamber of the Eye.

JACOB GOLDSMITH, Mount Sinai Hospital, New York:

Continued Studies on Experimental Intracapsular Cataract Extraction and Hannover's Canal: The Complete Suspensory Ligament from Serial Sections (Microscopic).

THOMAS N. HORAN, Eloise Hospital, Detroit:

Laparoscopy.

DAVID MILLER, College of Medical Evangelists, Los Angeles:

Motion Picture Photography of the Rectum and Rectosigmoid.

ROBERT TURELL, Mount Sinai Hospital, New York:

Tattooing with Mercuric Sulfide for Intractable Pruritus Vulvae and Ani.

W. WAYNE BABCOCK and HARRY E. BACON, Temple University Hospital, Philadelphia:

Surgical Treatment of Rectal Cancer.

WILLIS C. BEASLEY, National Institute of Health, Bethesda, Md.:

Thoracic Cine Fluorography.

Awards

There will be two groups of awards in the Scientific Exhibit consisting each of (*a*) gold medal, (*b*) silver medal, (*c*) bronze medal, (*d*) certificates of merit and (*e*) honorable mention.

[NOTE.—The special subsidized exhibits (fractures and backache) and the exhibits of the headquarters of the American Medical Association are not open to awards.]

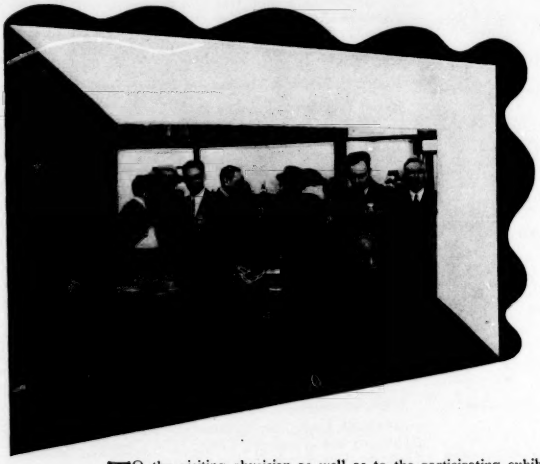
GROUP I

Awards in group I are made for exhibits of individual investigations, which are judged on basis of originality and excellence of presentation.

GROUP II

Awards in group II are made for exhibits that do not exemplify purely experimental studies but which are judged on basis of the excellence of correlating facts and excellence of presentation.

THE TECHNICAL EXPOSITION



★

One of the Outstanding Features of the Atlantic City Session . . . .

★

TO the visiting physician as well as to the participating exhibitor, the Technical Exposition this year may well bring a deep feeling of pride. For here will be displayed the newer and more important products of an industry which is as vitally necessary in war as in peace—an industry which goes hand in hand with the physician in maintaining the health of 130,000,000 Americans whether in the home, in the factory, or in the armed forces.

Physicians will, therefore, find it advisable to spend the maximum amount of time in visiting and studying the many interesting exhibits which will make up the Exposition. Practically every single exhibit will offer to the visitor something of immediate interest—a new product, an improvement over an old product, a new technique, or new scientific information—presented by charts, mechanical displays, or by skilled technicians and researchists.

Altogether more than 200 firms will participate in the Technical Exposition. Leading medical publishers will have at hand a full showing of their newest books as well as the standard works. Virtually every pharmaceutical manufacturer will have new products or new information to present. Instrument, apparatus, and supply houses will show vast arrays of new and standard items, and producers of foods for infant feeding and other special purposes will show how closely they are following the newest developments in nutrition.

Because the Technical Exposition, the Scientific Exhibits, General Sessions and Section Meetings will all be held within the Atlantic City Auditorium, physicians will find it convenient to visit exhibits before and after meetings. The Technical Exposition is really one of the practical, educational features of the Annual Session and time given to it every day will prove a splendid investment.

Exhibits will be open each day from 8:30 A. M. to 6:00 P. M., closing at 4 P. M. Friday. On the following pages are brief descriptive items giving a preview of most of the exhibits.

WILL C. BRAUN, *Director of Exhibits.*

APPARATUS AND INSTRUMENTS

A-B STOVES, INC.
Booth 10-H

An ambulance folded away in the trunk of a doctor's car, ready at a minute's notice, is a novel, new device to be exhibited by A-B Stoves. Perfected for the war emergency, the Swift First-Aider ambulance unit has been hailed by medical men as the long-sought answer to quick, safe handling. See it demonstrated.

A. S. ALOE COMPANY
Booths 16, 17, 18-H

A. S. Aloe Company cordially invites you to visit their display, which will include a complete line of American-made stainless steel surgical instruments, surgical supplies, laboratory apparatus, and physical therapy equipment. Many new and exclusive items of interest to the profession will be shown here.

AMERICAN SAFETY RAZOR CORPORATION
Booth 8-P

For complete information on A.S.R. Surgeon's Blades visit the booth. Meet the company representatives, who can answer questions about these surgeon's blades. They will gladly explain the various uses of the blades—9 types in all.

AMERICAN STERILIZER COMPANY
Booth 14-J

A display of typical modern office types of sterilizers will appear in this exhibit. Attendants will be on hand to welcome you and discuss the equipment with you.

AUSTENAL LABORATORIES, INC.
Booth 11-O

A complete line of Vitallium appliances for internal fixation of fractures, arthroplasty, and replacement of bony and soft tissue will be displayed. Vitallium has been found to be the only alloy which is completely inert in vivo, does not irritate the tissues, and is unaffected by body fluids.

C. R. BARD, INC.
Booth 5-S

C. R. Bard, since 1907 the leading importer of French catheters and bougies, will show the new line of American-made instruments. These will include not only rubber catheters and drains, but also for the first time the new Bard-Usci line of woven catheters and bougies, both urethral and ureteral. A visit to this display will demonstrate that American doctors are no longer dependent on foreign-made urological instruments.

BARD-PARKER COMPANY, INC.
Booth 9-S

Bard-Parker will exhibit its new No. 9 knife handle, especially designed for general office use. Other products to be shown are: Rib-Back surgical blades, long knife handles for deep surgery, renewable edge scissors, transfer forceps, hematological case for obtaining bedside blood samples, ortholator for obtaining accurate dental radiographs.

BECTON, DICKINSON & COMPANY
Booths 11 and 12-Q

A display of syringes, needles, diagnostic instruments, Ace bandages, elastic adhesive bandage, and thermometers will be presented. Doctors are invited to stop in and discuss methods of conserving the available supply of these items. Trained personnel will be in attendance for the convenience of visitors.

CAMERON SURGICAL SPECIALTY COMPANY
Booths 11 and 12-L

See the new Cameron Omniangle Flexible Gastroscope, Binocular Prism Loupe, Color-Flash Clinical Camera, the Mirrolite and latest developments in electrically lighted diagnostic and operating instruments for all parts of the body. Of special interest are the new spark gap and tube electro-surgical units for cutting, coagulating, desiccation, and fulguration.

WILMOT CASTLE COMPANY
Booth 3-O

The war-busy physician today needs all the mechanical help he can get to make his tasks go easier and more quickly. Good sterilizing and lighting equipment is a material help in these circumstances. Modern aids in the way of new sterilizers and new lighting for the physician, clinic, surgeon, and hospital will be shown.

CLAY-ADAMS COMPANY, INC.
Booth 1-DD

The Clay-Adams Co. will show new orthopedic devices, the Herzmark-Adams traction reel, bone awl and drill, plastic splints, stone fistula obturator, Einhorn gastroduodenal tubes, Landau-Adams microsedimentation apparatus, Uncoprene (synthetic rubber) catheters, drains, and tubes, obstetrical manikins, skeletons, anatomical charts, new first aid skeleton chart.

CONTINENTAL SCALE CORPORATION
Booth 6-R

Continental Scale Corporation will show a complete line of the latest models of personal weighing scales for home use, hospitals, schools, and physicians' offices.

CRESCENT SURGICAL SALES CO.
Booth 1-R

In the complete setting of the "little operating room," visitors may watch the pretty nurse give the Master Blade Crescent to the surgeon. Every item—operating table, lights, instruments, nurses and internes are made to accurate scale. It promises to be dramatic, interesting, instructive. Surgeons will also be interested in inspecting the new Plaster Knife and the X-acto Pocket Knife.

DEVILBISS COMPANY
Booth 13-K

A complete line of atomizers for the scientific treatment of nose and throat infections will be on display. The latest addition to the line is an all-glass atomizer having four outstanding features important in home application of nose and throat solutions. The DeVilbiss representative will demonstrate this all-glass atomizer, as well as many other instruments.

J. H. EMERSON COMPANY
Booth 11-H

J. H. Emerson Company will exhibit apparatus for artificial respiration.

FOREGGER COMPANY, INC.
Booth 8-T

Foregger Company will show new anesthesia apparatus, new developments in CO_2 absorbers, including a twin canister model for indicator soda lime, complete intratracheal equipment and oxygen therapy and resuscitation apparatus, and Alexander's mouth to mouth insufflator. Physicians are invited to stop in and hear representatives' explanations of any of the above equipment.

GOMCO SURGICAL MFG. CORPORATION
Booth 15-R

The Gomco Corporation will exhibit their complete line of explosion-proof suction and ether pumps, their electric breast pumps, nose and throat treatment units, Thermotic drainage pumps, and centrifuges. The bloodless circumcision clamp will also be demonstrated.

V. MUELLER & COMPANY
Booths 12 and 13-AA

Despite unprecedented demands of the war effort on the facilities of this company, a complete exhibit of modern American made instruments and surgical equipment will be shown. Among a number of new developments, the improved Herb-Mueller anesthesia unit will be on display, with a representative line of other fine Mueller equipment.

OHIO CHEMICAL & MFG. CO.
Booth 9-P

Among other well-known equipment, Ohio Chemical & Mfg. Co. will exhibit two newly accepted resuscitators, the Heidbrink Bassinet, and the Heidbrink Adult Resuscitator, both Kreiselman models. Physicians are invited to inspect this equipment.

OXYGEN EQUIPMENT MFG. COMPANY
Booth 5-N

Manufacturers of the Barach Thurston oxygen tents will show their O. E. M. meter mask and their new positive pressure meter mask. These units are of great interest to hospitals particularly at this time.

PELTON & CRANE COMPANY
Booth 1-S

The Pelton and Crane Company will display sterilizers, operating lights and cuspidors for physicians' offices and clinics. Featured will be the self-contained Pelton Automatic Autoclave, increasingly popular with industrial first aid clinics. The representative in charge will welcome your inquiries.

GEORGE P. PILLING & SON COMPANY
Booth 5-O

To see a number of important recent developments, physicians are invited to visit this exhibit. Important items to be shown include the Lemmon equipment for continuous spinal anesthesia, Tocantin needles for transfusion through the bone marrow, Miller-Abbot tubes for small intestine intubation, and Chevalier Jackson Bronchoscopic instruments.

PROMETHEUS ELECTRIC CORPORATION
Booth 17-J

The latest designs in emergency operating lights, sterilizing equipment and therapeutic lamps will be on display. The emergency lights should be of distinct value in assuring light for physicians during black-outs. Prometheus lighting engineers will be glad to go into various hospital problems with interested visitors.

RITTER COMPANY, INC.
Booths 5 and 6-I

This company will display its entire line of medical equipment, including the recently announced Model MB ear, nose and throat unit, which has spray bottles, medicaments, the electrical and air appliances on one side and the vacuum, waste and water on its new surgical cuspidor on the other. Other products to be shown include: motor chairs, bone surgery engine, sterilizers, compressors, fluorescent lights and stools.

SAFETY GAS MACHINE CO., INC.
Booth 2-O

The latest approved anaesthesia apparatus by this manufacturer will be displayed. The exhibit will be in charge of an experienced anaesthetist who will be glad to discuss problems of this field with you.

SCANLAN-MORRIS COMPANY
Booth 2-H

Representatives will demonstrate the safety and service features of explosion-proof Underwriters' approved operating room lights, and portable emergency battery-equipped surgical lights so essential in present-day hospital work. The new St. Mary's-Balfour general operating table is another outstanding item which will be available for inspection. Typical Scanlan sutures for specific surgery uses also will be demonstrated.

SINGER SEWING MACHINE COMPANY
Booth 6-Q and 13-P

The newly announced Surgical Stitching Instrument will be displayed by the Singer Company. Developed in close cooperation with the surgical profession, this instrument is the result of extensive research, and is constructed with the same craftsmanship that has marked Singer Sewing Machines for almost a century. Clinical trials have shown its success and practicability under difficult operating conditions. Doctors are cordially invited to see this new contribution to surgery.

J. SKLAR MANUFACTURING CO.
Booth 18-L

Visitors will find here a comprehensive exhibit of new suction and pressure apparatus, also a display of Sklar's American made stainless steel surgical instruments. Dr. Ernest P. Cayo, orthopedic surgeon of San Antonio, Texas, will be present to discuss with interested surgeons the new Cayo Orthopedic Instruments which are to be manufactured by the Sklar Company.

C. M. SORENSEN COMPANY
Booth 4-R

Physicians are invited to discuss their problems of office equipment in connection with ear, nose and throat work. Many new models of suction and pressure apparatus will be on display for demonstration.

UNION CARBIDE COMPANY
Booth 15-N

On display are Linde Oxygen U. S. P., the Linde R-50 Oxygen Therapy Regulator, and the Linde L-14 Oxygen Therapy Station Flow-meter. Also various types of small portable oxygen administering apparatus. Representatives will discuss the latest developments in oxygen therapy, and provide information on the mechanical and management aspects of administering oxygen in the hospital or the home.

VISCHER PRODUCTS COMPANY
Booth 12-R

Two highly practical types of Flex-Seal Pressure Sterilizers will be offered in this exhibit. One—electrically operated, compact in size, rapid in action, equipped with automatic controls—is for office use. The other, the Flex-Seal Midget, is a small portable sterilizer which also provides pressure sterilization. It can be used on a gas hot plate or any other convenient source of heat.

MAX WOCHER & SON COMPANY
Booth 12-O

This 105-year-old house will display hundreds of its finest surgical instruments and a complete line of supplies. Physicians will be cordially welcomed and demonstrations given.

EXHIBITORS

A-B Stoves, Inc. 10-H
Abbott Laboratories, North Chicago, Ill. 2-T
Agfa Ansco, Binghamton, N. Y. 6-P
Aiba Pharmaceutical Co., Inc., N. Y. C. 10-K
Allergia Products Co., Newton, Mass. 5-T
Allison Co., W. D., Indianapolis 3-N
Almay, Inc., N. Y. C. 16-R
Aloe Co., A. S., St. Louis ..... 6 ft. 16-H, 17-18-H
American Bottlers of Carbonated Beverages, Washington, D. C. 7-P
Amer. Can Co., N. Y. C. 15-S
Amer. Hospital Supply Corp., Chicago 8-U
Amer. Institute of Baking, N. Y. C. 4-U
American Nurses' Association 1-O
Amer. Optical Co., Southbridge, Mass. 4, 5, 6, 7-K
Amer. Physicians Art. Assn, San Francisco
Adjoining Section Meeting Room C (North)
Amer. Safety Razor Corp., Brooklyn 8-P
Amer. Seal-Kap Corp., L. I. C., N. Y. 12-H
Amer. Sterilizer Co., Erie, Pa. 14-J
Appleton-Century Co., D., N. Y. C. ..... No. 2-AA
Arlington Chemical Co., Yonkers, N. Y. 1-L
Armour Labs., Chicago 19-20-21-H
Army Medical Corps, East End of Aisles U V & W
Artra Cosmetics, Inc., Bloomfield, N. J. 8-Y
Ass'n of Limb Mfrs. of America, Chicago 1-I
Aurex Corporation, Chicago, Ill. 6-T
Austenal Labs., Inc., N. Y. C. 11-O
Aznoe's-Woodward Med. Pers. Bur., Chicago 5-Q

Bard, Inc., C. R., N. Y. C. 5-S
Bard-Parker Co. Inc., Danbury, Conn. 9-S
Baum Co., Inc., W. A., N. Y. C. 4-Q
Bausch & Lomb Op. Co., Rochester, N. Y. 11-J

ZIMMER MANUFACTURING COMPANY
Booth 4-M

A very complete line of fracture equipment will be exhibited by this manufacturer. Among the new items on display will be the improved screw driver, the cast cutter, rib splint, Red Cross type of Thomas arm and leg splints, Carnes wire twister, screw and plate container, bone plate benders, and the improved intertrochanteric bone plate.

DIAGNOSTIC EQUIPMENT

AMERICAN OPTICAL COMPANY
Booths 4, 5, 6, 7-K

Scientific eye-diagnostic instruments and equipment will be exhibited by American Optical Company. In addition Spencer Lens Company, scientific instrument division of AO, will show microscopes and other instruments used by doctors.

W. A. BAUM COMPANY, INC.
Booth 4-Q

This exhibit will be devoted exclusively to blood pressure apparatus, as have the efforts of the manufacturer for more than twenty-five years. The new Standby, a practical floor model, will be featured and visitors may also view all other models, plus a complete line of genuine latex replacement parts.

BECK-LEE CORPORATION
Booth 14-N

Due to the unusual burdens placed upon every practice under today's conditions, physicians are expected to be especially interested in the exhibit of the Beck-Lee Quartz-String Electrocardiographs. This equipment, designed by Charles F. Hindle, incorporates all those principles necessary for accurate, dependable electrocardiography.

WARREN E. COLLINS, INC.
Booth 16-Q

The latest Drinker-Collins Duplex respirator, which treats two children in the same machine, will be shown here. The new streamlined combination infant respirator and incubator will also be of interest. Latest models of both the Benedict-Roth metabolism apparatus and Collins Oxyflo oxygen tent will also be on display. Physicians are invited to see demonstrations of this equipment.

GASTRO-PHOTOR LABORATORIES
Booth 5-R

This display will be of interest to physicians interested in complete and accurate diagnosis of gastric pathology. The new automatic stomach camera for color photography, a recent development in modern diagnostic equipment will be exhibited, together with a large number of normal and pathological gastrophotographs in natural color and black and white.

JONES METABOLISM EQUIPMENT COMPANY
Booth 7-I

A visit here will reveal new and original devices added to the Jones Motor-Basal metabolism unit to assure accuracy of the basal metabolism test. Physicians are invited to call and have representatives explain these distinctive features.

KEYSTONE VIEW COMPANY
Booth 10-L

The ever increasing interest in visual screening tests and in the rehabilitation of men who fail to pass the visual tests for entrance into Army and Navy will make a visit to this booth of unusual importance. Widely used screening tests and conservative orthoptic procedures will be featured.

LAMOTTE CHEMICAL PRODUCTS COMPANY
Booth 17-L

This exhibit will include some of the latest developments of the LaMotte research department, among them the office model of the LaMotte Falling Drop Densiometer; the new LaMotte sulfonamide outfit; the new LaMotte unit for vitamic C determinations, and others. Information on the operation of these units will be given to visiting physicians.

SANBORN COMPANY
Booth 16-P

At the Sanborn Company booth visitors will find a display of cardiac diagnostic apparatus for both clinical and research use. Clinical needs are provided for in the Cardiette, for electrocardiography alone; the Stetho-Cardiette, also for phonocardiography; the Cardioscope, for visual cardiac recording; and the 1942 Waterless for modern metabolism testing. Designed primarily for research is the new Tri-Beam Stetho-Cardiette, which combines electrocardiography, phonocardiography and electrical auscultation.

SPENCER LENS COMPANY
Booth 7-K

See American Optical Company.

TAYLOR INSTRUMENT COMPANIES
Booth 13-M

Physicians are invited to stop at the Taylor booth and see the new Tycos Hook-Type cuff, which saves time and increases accuracy. Made from reinforced army cloth and metal ribs, it gives uniform compression over the entire width of the cuff—and many years of active service. Visitors here may see the Tycos Aneroid Sphygmomanometer, and the "Lag Error" demonstration.

U. M. A. INC.
Booth 11-R

A complete line of vascular equipment will be exhibited. Visitors can see and use the Collens Sphygmo-Oscillometer, a blood pressure machine and oscillometer combined, recognized as an important diagnostic aid in vascular disease. Continual demonstrations will be given with the Collwell Intermittent Venous Occlusion Apparatus and the U. M. A. Thermocouple.

DIETETIC PRODUCTS

AMERICAN INSTITUTE OF BAKING
Booth 4-U

Facts about Enriched Bread (enriched with vitamins and minerals), of direct significance to every physician, will be available at this exhibit. Enriched Bread complies with the almost universal preference for a white loaf, yet approximates the nutritive values of whole wheat. Its use is encouraged by the A.M.A. Council on Foods and Nutrition, and other medical and scientific authorities.

AMERICAN SEAL-KAP CORPORATION
Booth 12-H

You are invited to stop here for a cool drink of Enzylac Milk. This fresh milk of low curd tension, fine flavor and easy digestibility will be served throughout the convention. Reprints from the literature covering over five years of laboratory and clinical experience in this field will be mailed upon request of visiting physicians.

BEECH-NUT PACKING COMPANY
Booth 6-M

Twenty-two different foods for babies will be the Beech-Nut Packing Company's exhibit. These will include their Strained Foods and Chopped Foods, packed in glass with reseal covers which make the glass jars ideal for refrigerator storage. A new product which will probably interest physicians is strained squash, a good beginning vegetable, used in the diet much as are carrots.

BEST FOODS, INC.
Booth 14-K

The manufacture of Nucoa, the modern vegetable margarine, will be dramatized. The display will feature the testing carried on to maintain the uniform quality of Nucoa and its consistent vitamin A potency of 9,000 U.S.P. units per pound. Highlighted also will be the fine flavor and texture of Nucoa and the increasingly important place of fortified margarine in the national nutrition program.

BIRDS EYE FOODS (GENERAL FOODS)
Booth 18-N

This exhibit will feature the nutritional angle of Birds Eye Foods, their excellent food value, ease of preparation, freedom from waste and appetite appeal.

BORDEN COMPANY
Booths 1, 2 and 3 Lobby

A cordial reception awaits physicians and their friends here. The complete display of Borden's scientifically designed Council accepted infant foods includes such new products as Biolac, New Improved Dryco, and Mull-Soy. As in the past, a wide variety of Borden's delicious cheeses will be served every afternoon at the Borden Cheese Bar adjacent to the professional exhibit.

CARNATION COMPANY
Booth 3-V

In this exhibit you may see a complete and dramatic presentation of the story of Irradiated Carnation Milk. Every operation in the processing—from farm to finished product—will be performed in miniature before the eyes of visitors. You are invited to enjoy this personally conducted tour through a Carnation evaporating plant.

CEROPHYL LABORATORIES, INC.
Booth 8-N

Cerophyl Laboratories will have on display photographic records of timely and interesting vitamin experiments. Now that the nation's attention is centered on proper nutrition and corrective diets, you will not want to miss this exhibit. A cordial invitation is extended to visit here.

CORN PRODUCTS REFINING COMPANY
Booth 6 Lobby

Increasing recognition of Mazola Corn Oil as a rich source of linoleic acid has inspired many requests from physicians for information on the use of Mazola in palatable high-fat diets. The helpful booklet which has been prepared shows the chemical composition of Mazola, a qualitative analysis, specific disturbances in which Mazola has proved clinically effective, and a dietary regime with actual recipes. Ask for your copy of this booklet.

DIETENE COMPANY
Booth 11-K

Physicians are invited to become acquainted with two new products in this exhibit: Dietene's Supplement for use in reduction diets and Dietene's Accessory Feeding, a high protein, high vitamin, high mineral complement, for use in other restricted diets. They may furnish the answer to many feeding problems.

EXHIBITORS

Beauty Counselors, Grosse Pointe, Mich.....7-M
Beaver, Inc., Rudolph, Waltham, Mass.....17-P
Beck-Lee Corp., Chicago.....14-N
Becton, Dickinson & Co., Rutherford, N. J. 11, 12-Q
Bedford Surgical Co., Inc., Brooklyn.....7-R
Beech-Nut Packing Co., Canajoharie, N. Y..6-M
Best Foods, Inc., N. Y. C.....14-K
Bilhuber-Knoll Corp., Orange, N. J.....16-M
Blakiston-Co., Philadelphia.....5-J
Borden Company, The, N. Y. C.....1-2-3 Lobby
Breon & Co., George A., Kansas City, Mo...11-I
Burdick Corporation, Milton, Wis.....18-S
Burroughs-Wellcome & Co., N. Y. C.....6-V

Cambridge Instrument Co., Inc., N. Y. C...12-K
Camel Cigarettes, New York, N. Y...9-Q & 10-P
Cameron Surg. Spec. Co., Chicago.....11, 12-L
Camp & Co., S. H., Jackson, Mich.....4-AA
Canad. Radium & Uranium Corp., N. Y. C..14-P
Carnation Company, Milwaukee.....3-V
Cash, Inc., J. & J., So. Norwalk, Conn.....8-L
Castle Co., Wilmot, Rochester, N. Y.....3-O
Cerophyl Laboratories, Kansas City, Mo....8-N
Chayes Dental Instrument Corp., N. Y. C...19-I
Church & Dwight Co., Inc., N. Y. C.....14-S
Ciba Pharmaceutical Prods., Summit, N. J..13-I
Citrus Concentrates Inc., Dunedin, Fla....11-N
Clay-Adams Company, Inc., N. Y. C.....1-DD
Coca-Cola Company, Atlanta, Ga..12P and 7-Q
Codman & Shurtleff, Inc., Boston, Mass....10-K
Collins, Inc., Warren E., Boston.....16-Q
Colwell Publishing Co., Champaign, Ill....17-N
Conformal Footwear Company, St. Louis....1-N
Continental Scale Corp., Chicago.....6-R
Continental X-Ray Corporation, Chicago....8-R
Corn Products Refining Co., N. Y. C....6 Lobby
Crescent Surgical Sales Co., Inc.....1-R
Curvlite Prods., Inc., Port Chester, N. Y....8-Q
Cutter Laboratories, Berkeley, Calif.....15-I

FLORIDA CITRUS COMMISSION
Booth 10-R

Visiting members are cordially invited to stop here for a generous sampling of orange or grapefruit juice. These juices are made from Sunfilled Pure Concentrated Citrus Juices. While visiting the exhibit, you may hear a little of the history and development of these interesting products and the part they are playing in our war effort.

GENERAL MILLS, INC.
Booth 15-P

Make a "must-see" stop on your Convention tour at the Better Nutrition exhibit sponsored by the special commodities and grocery products divisions of General Mills. Featured here will be Gold Medal "Kitchen Tested" Enriched Flour, Bisquick, Wheaties, Cheerioats and Kix, all nutritionally improved products, and Embo and Vitamin D, the latter two representing the special commodities division.

GERBER PRODUCTS COMPANY
Booth 16-L

Tables showing vitamin, mineral, and other nutritive values of the thirty Gerber Foods will be conveniently arranged for ready reference by visiting physicians on Gerber's Professional Filing Cards. Inspection of the complete line of foods and up-to-date literature is invited.

CHRIS HANSEN'S LABORATORIES, INC.
Booth 16-N

"The 'Junket' Folks" will present enlarged photos showing the action of the rennet enzyme in forming softer, finer milk curds, also a display of "Junket" brand food products. Literature describing dietary uses of rennet-custards in infant, child, convalescent, or postoperative feeding will be available, and a well informed attendant will be on duty at all times.

HAWAIIAN PINEAPPLE COMPANY, LTD.
Booth 10-J

Despite troubled conditions in the Pacific, Dole Pineapple Juice from Hawaii will appear again at this year's convention. You will find this refreshing beverage at the Dole booth, along with new information as to availability, nutritional benefits and other data concerning all Dole pineapple products.

H. J. HEINZ COMPANY
Booths 2 and 3-S

The Heinz exhibit featuring Strained and Junior Foods will merit your thoughtful attention if you prescribe for infant feeding or adults on soft diets. While you are visiting the exhibit, be sure to register for the tenth edition of the popular Nutritional Charts and Nutritional Observatory—a quarterly journal edited by the staff of the Heinz Nutritional Research Division in the Mellon Institute.

IRRADIATED EVAPORATED MILK INSTITUTE
Booth 9-N

You are cordially invited to register for a free copy of our new manual for physicians, Infant Feeding with Irradiated Evaporated Milk. Included in this comprehensive booklet are discussions of the feeding of newborns, complementary feeding, supplementary foods, and other phases of the dietary management of infants. Other material on the uses of evaporated milk in the dietary is available.

LIBBY, McNEIL & LIBBY
Booth 2-V

Libby's Homogenized Baby Foods and Evaporated Milk will be featured. Spectators will see the story of these products in a slide film while they listen in on an interesting dialogue which can be heard only over telephones installed at the booth. Advantages of the exclusive Libby process of preparing baby foods will be described.

M & R DIETETIC LABORATORIES
Booth 8-I

Physicians are cordially invited to visit this booth, where competent representatives will be pleased to discuss the merits of Similac, a food for infants deprived of breast milk, and to suggest its application for both the normal and special feeding case.

MEAD JOHNSON & COMPANY
Booths 9, 10-DD, 8-K, I, 2-AA

The war has not yet seriously affected the normal production of Mead Johnson products. The display this year will include Nutramigen, known during its experimental stage as Amigen Compound. This product offers a new approach to the dietetic control of allergy.

MELLIN'S FOOD COMPANY
Booth 3-L

That you may be fully informed regarding the wide usefulness of Mellin's Food, you are invited to meet our representatives at the convention. They will present for your consideration details of the composition of Mellin's Food and its application in preparing nourishment for infants, children and adults.

NATIONAL LIVE STOCK AND MEAT BOARD
Booth 7-V

This exhibit will portray the role of meat as a source of protein, calories, minerals, and vitamins in the adequate diet. Literature showing the food value of meat and the place of meat in the national nutrition program will be available.

NESTLE'S MILK PRODUCTS
Booth 10-O

Nestle's will feature Lactogen, which has behind it the firm's experience of more than three-quarters of a century in the manufacture of baby foods and other milk products. Representatives will be glad to discuss Lactogen with physicians interested in infant feeding.

PENICK & FORD, LTD., INC.
Booth 4-N

The makers of Brer Rabbit Molasses invite your consideration of new findings on this rich and inexpensive source of iron. Results of research will be on exhibit at the booth. Significant is the conclusive demonstration of high availability (over 80%) of molasses-iron, which establishes New Orleans Molasses as second only to beef liver as a food source of absorbable iron.

PET MILK COMPANY
Booths 6 and 7-U

An actual miniature working model of a milk condensing plant will be exhibited. This display will offer an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the booth.

POSTUM (GENERAL FOODS)
Booth 18-N

Visitors are invited to have a refreshing drink of iced Postum at the booth. This wholesome cereal beverage is made from whole wheat and bran, roasted and slightly sweetened. It is available in two forms—Postum Cereal made like coffee and Instant Postum made instantly in the cup or pot. Postum-made-with-milk is an easy way to keep milk interesting whether served iced or hot.

S. M. A. CORPORATION
Booths 7 and 8-O

New and rare nutritional biochemicals will be on display at the S. M. A. booth. Wax moulages demonstrating nutritional deficiencies in humans and experimental animals exhibiting various deficiency diseases will be of interest. Trained members of the field and research staff will be in attendance.

SANKA (GENERAL FOODS)
Booth 12-N

A cup of delicious Sanka Coffee will be served to visitors at the booth. This choice blend of Central and South American coffees has 97% of the caffein removed.

SCIENTIFIC SUGARS COMPANY
Booth 15-O

Scientific Sugars Company will have on display Cartose, Hidex, and the Kinney line of nutritional products. Competent representatives will be on hand to give any possible help to physicians, who are cordially invited to stop.

STANDARD BRANDS INCORPORATED
Booth 4-K

Enriched White Bread and the part it is playing in the drive for better nutrition will highlight the Standard Brands exhibit. Attending physicians will have an opportunity to discuss with nutrition authorities the part played by proper food in the war effort. Visitors are urged to see the motion picture, "The Modest Miracle," which will be shown by the Medical Film Guild, Booth 14-AA, Technical Exhibition Hall.

SUN-RAYED COMPANY
Booth 16-J

Doctors are invited to stop for a refreshing drink of Kemp's Sun-Rayed Tomato Juice. This juice is made from prize-winning tomatoes of the 1941 Indiana tomato champion and runner-up champion, and crops of hundreds of other Kemp growers who won gold and silver medals for their high quality tomatoes.

UNITED FRUIT COMPANY
Booth I-H

The latest authentic information on the nutritive and therapeutic values of the banana will be available at this exhibit. The display will present some of the important clinical and nutritional studies which have been undertaken the past few years, and reports of these which have recently been published.

VEGEX CORPORATION
Booth 3-P

The makers of Vegex yeast vegetable extract invite physicians to call at their exhibit and make the acquaintance of their product. Derived from fresh brewers' yeast and vegetables, the American Vegex has been improved, especially in flavor.

HEARING AIDS

AUREX CORPORATION
Booth 6-T

Visitors are invited to inspect the Aurex Hearing Aid display. The newest Aurex, Model C, Vacuum Tube Hearing Aid, is said to be worthy of careful investigation. The regular air conduction receiver and the new Aurex crystal bone conduction receiver will also be shown. The Aurex method of fitting hearing aids to individuals' hearing needs will be explained in detail to visitors.

EXHIBITORS

Davies, Rose & Co., Ltd., Boston.....1-O
Davis Co., F. A., Philadelphia.....15-M
Davis & Geck, Inc., Brooklyn.....
.....West Entrance Lobby
Day's Ideal Baby Shoe Co., Danvers, Mass..8-S
Denver Chemical Mfg. Co., N. Y. C.....10-L
DePuy Manufacturing Co., Warsaw, Ind....13-R
Devereux Foundation, Devon, Pa.....3-M
DeVilbiss Company, Toledo, Ohio.....15-K
Dictograph Sales Corp., New York, N. Y..5-U
Dietene Company, Minneapolis.....11-K
Drug Products Co., Inc., L. I. City, N. Y....2-I
Duke Laboratories, Inc., Stamford, Conn.....9-K

E. I. Du Pont deNemours & Co., Wilmington, Delaware 4-I
E & J Company, Philadelphia.....5-P
Earnshaw Knitting Co., Newton, Mass.....2-Q
Eastman Kodak Company, Rochester, N. Y..7-H
Edison, Thomas A., Inc., Bloomfield, N. J..9-R
Emerson Company, J. H., Cambridge, Mass..11-H
Endo Products, Inc., Richmond Hill, N. Y..9-AA

Fischer & Co., H. G., Chicago.....4-O
Fisher-Stevens Service, Inc., N. Y. C.....2-P
Flint, Eaton & Co., Decatur, Ill.....5-DD
Florida Citrus Commission, Lakeland, Fla..10-R
Foley Mfg. Co., Minneapolis.....17-I
Foregger Co., Inc., N. Y. C.....8-T
Fougera & Co., Inc., E., N. Y. C.....4-S

Gane's Chemical Works, Inc., New York, N. Y. 9-R
Gastro-Photor Labs., N. Y. C.....5-R
General Elec. X-Ray Corp., Chicago..3, 4, 5-H
General Foods, N. Y., N. Y.....18-N & 13-P
General Mills, Inc., Minneapolis.....15-P
Gerber Products Co., Fremont, Mich.....16-L
Gilliland Laboratories, Inc., Marietta, Pa...1-P
Gomco Surgical Mfg. Corp., Buffalo, N. Y...15-R

DICTOGRAPH PRODUCTS CORPORATION
Booth 3-U

Acousticon will exhibit a practical answer to the National Health Survey's finding of 9,000 deaf persons. From the official conclusions, Acousticon engineers have perfected a new and advanced instrument, the radio-amplified Symphonic Acousticon, the performance of which will be demonstrated at this Convention booth.

MAICO COMPANY, INC.
Booth 3-U

Precision hearing instruments will be demonstrated against the background of the Maico Tone-Color organ, on which visitors can check their own hearing acuity and study the operation of the Maico audiometer. This audiometer is used for hearing tests by the Army, Navy, every major airline, and many physicians. Attractive souvenirs will be presented to visiting physicians and their wives.

OTARION, INC.
Booth 2-K

Otarion, Incorporated, has prepared an attractive portfolio of facts on its vacuum tube hearing aid. This material should be of special interest to physicians having otological cases in which physical therapy is indicated. The same data is available to physicians not attending the Convention. Requests may be addressed to Otarion, Inc., 448 North Wells St., Chicago, Illinois.

MEDICAL BOOKS

D. APPLETON-CENTURY COMPANY, INC.
Booth 2-AA

Here the Appleton-Century representatives are featuring important new books on First Aid, Clinical Parasitology, Psychologic Care During Infancy and Childhood, Symptom Diagnosis, Practice of Medicine and Operative Surgery. These and other recent revisions of standard titles may be examined at leisure. Also available will be advance data on the new Clinical Diagnosis by Laboratory Methods by John Kolmer and Frank Konzelmann.

BLAKISTON COMPANY
Booth 5-J

This company will exhibit its complete line of medical books, among them: the new sixteenth edition of Hughes' Practice of Medicine, a favorite of general practitioners; the new Stitt Diagnosis, Prevention and Treatment of Tropical Diseases, sixth edition, rewritten by Strong; the new Functional Neuroanatomy by Krieg and the new tenth edition of Morris' Human Anatomy; Gould Medical Dictionary, fifth edition.

COLWELL PUBLISHING COMPANY
Booth 17-N

The firm will present the Daily Log for Physicians, fifteenth edition of a bookkeeping system which provides a display of important income and expense items, all in loose leaf form, well bound. Figures that are essential for income tax returns, budgets, and legal aid are simply systematized. Easily maintained and complete, the Log is edited annually, keeping it abreast of all possible improvements.

F. A. DAVIS COMPANY
Booth 15-M

Here the teacher, the specialist, the general practitioner, the intern and medical student will find many new and interesting books, including Digestive Diseases in General Practice, Willard; Therapeutics of Infancy and Childhood, Litchfield and Dembo; Vaginal Hysterectomy, Kennedy-Campbell; Medical Diagnosis, Loewenberg; Ear, Nose and Throat, Lederer; Internal Diseases of the Eye, Troncoso; Cardiovascular Disease, Stroud; and the book of the day—The Cyclopedia of Medicine, Surgery and Specialties.

PAUL B. HOEBER, INC.
Booth 14-I

An invitation is extended to look over the new Hoeber books, including: Preventive Medicine in Modern Practice and Dressler's Clinical Cardiology, and such recent books as Alvarez, Gastro-Enterology, Hertzler's Thyroid Gland, Ferguson's Roentgen Diagnosis of the Extremities and Spine, Nielsen's Neurology, and those by Pardee and Elsberg. Find out about Berliner's forthcoming Biomicroscopy of the Living Eye.

LEA & FEBIGER
Booth 14-H

Among their new works Lea and Febiger will exhibit Wintrobe's Clinical Hematology, Craig's Manual on Protozoan Diseases, Katz' Electrocardiography and Exercises in Electrocardiographic Interpretation, Rowe's Elimination Diets and Kraines' Therapy of the Neuroses and Psychoses. New editions will be shown of Kovacs' Electrotherapy and Light Therapy, Werner's Endocrinology, Gifford's Ocular Therapeutics, Bridges' Dietetics for the Clinician, Comroe on Arthritis, Kuntz' Neuro-Anatomy, Lewin on The Foot and Ankle and Kessler's Accidental Injuries. Specimens of forthcoming publications will also be on exhibition.

J. B. LIPPINCOTT COMPANY
Booths 4 and 5 Lobby

A number of new Lippincott books of interest to physicians will be on display. Visitors are invited to stop and browse through the numerous titles in this exhibit.

MACMILLAN COMPANY
Booth 9-I

Interest at the Macmillan booth this year will center on the much discussed Disease and Injuries of the Larynx, by the Drs. Jackson. Other books of special interest will be Physical Chemistry for Students of Biochemistry and Medicine, by West, with its reference and review text for workers in biology and medicine, Webster's Rabies, Modern Bread from the Viewpoint of Nutrition by Sherman and Pearson.

C. V. MOSBY COMPANY
Booth 1-T

New publications and new editions to be displayed will include Kilduffe-DeBakey, The Blood Bank; Ken-Conwell, Fractures, Dislocations and Sprains; Tassman, Eye Manifestations of Internal Diseases; Porter-Carter, Management of the Sick Infant and Child; and Davison, Synopsis of Materia Medica, Toxicology and Pharmacology. An invitation is extended to visit this booth and examine these and other recent titles.

OXFORD UNIVERSITY PRESS
Booth 15-J

On display in this booth will be many works of interest to physicians. Among them are new titles such as: Blood Disorders in Children by Dr. Kugelmass, Workmen's Compensation and the Physician by Dr. Jordan, Gynecological Operations by Dr. Cameron, Text-Book of the Practice of Medicine edited by Dr. F. W. Price, and Oxford Medical Outline Series.

W. F. PRIOR COMPANY, INC.
Booth 13-J

Four practical solutions to the problem of keeping up to date will be offered for the examination of physicians. They are four loose-leaf reference books published by Prior, and periodically brought up-to-date on all proven clinical changes. Visitors are invited to see the current forms of Tice's Medicine, Lewis' Surgery, Brennemann's Pediatrics and Davis' Gynecology and Obstetrics.

W. B. SAUNDERS COMPANY
Booths 15 and 16-H

An unusually attractive exhibit of many new books and new editions will include: the six Official Military Surgical Manuals, the new 1942 Mayo Clinic Volume, Lundy's Anesthesia; Walters, Gray and Priestley's Carcinoma of the Stomach; Duncan's Metabolic Diseases; Johnstone's Occupational Diseases; Surgical Practice of the Lahey Clinic; Kolmer and Tuft's Clinical Immunology, Biotherapy and Chemotherapy; Cutler's Diseases of the Hand; Weiss and English Psychosomatic Medicine; Wharton's Gynecology.

SURGICAL PUBLISHING COMPANY
Booth 17-R

Convention visitors interested in surgical literature will enjoy the exhibit of Surgery, Gynecology and Obstetrics. Pages of this journal will be reproduced with special lighting to illuminate contents and bring out the fine typography and beautiful illustrations. An attendant will be present to point out unusual features of the journal, including the International Abstract of Surgery.

CHARLES C. THOMAS, PUBLISHER
Booth 12-J

New titles available for inspection at the Convention will include: Syphilis by Moore; Intestinal Obstruction by Wangensteen; Blood Substitutes by Mudd and Thalhimer; Burns by Harkins; Sterility by Hamblen; Wounds and Fractures by Orr; Skin Grafting by Padgett; Parasitology by Pearse; Nutrition by Macy; Epilepsy by Penfield and Erickson; Occupational Diseases by Reed and Harcourt; Surgical Physiology by Nash; and many others.

UNIVERSITY OF CHICAGO PRESS
Booth 1-R

Recent medical publications of the following University Presses are on exhibit in this booth: Yale, Minnesota, Harvard, Chicago, Columbia, Stanford, Princeton, Pennsylvania, Wisconsin, Duke, and Iowa State College. Convention visitors are invited to examine important journals, reports of research and general publications in the field, on display here.

WILLIAMS & WILKINS COMPANY
Booth 9-V

Williams and Wilkins and William Wood books will include many suitable for military and civilian practitioners under war conditions: Bailey, Surgery of Modern Warfare; Hurst, Medical Diseases of War; Fletcher, War Wounds and Injuries; Oakes, Bandaging and First Aid; Armstrong, Aviation Medicine; Bidgood, Urology in War; Brittain, Arthrodesis; Rowbotham, Acute Injuries of Head; Ross, War Neuroses; and others.

YEAR BOOK PUBLISHERS, INC.
Booth 8-J

Kelly and Dowell's Roentgen Treatment of Infections, Boas' Treatment of the Patient Past Fifty, Schauffler's Pediatric Gynecology, and a completely revised second edition of Sulzberger and Wolf's Dermatologic Therapy in General Practice are recent titles to be exhibited by the Year Book Publishers. Spink's Sulfanilamide and Related Compounds in General Practice, Gordon and Sevringhaus' Vitamin Therapy in General Practice, and other

EXHIBITORS

Hamilton Mfg. Co., Two Rivers, Wis....13, 14-O
Hanovia Chem. & Mfg. Co., Newark, N. J...6-O
Hansen's Lab., Inc., Chr., Little Falls, N. Y...16-N
Hawaiian Pineapple Co., San Fran., Cal...10-J
Heinz Co., H. J., Pittsburgh.....2, 3-S
Hoeber, Inc., Paul B., N. Y. C.....14-I
Hoffmann-LaRoche, Inc., Nutley, N. J.....6-J
Holland-Rantos Company, Inc., N. Y. C.....14-M
Hollister-Stier Labs., Spokane, Wash.....3-J
Hospital Liquids, Inc., Chicago, Ill.....1-P
Hynson, Westcott & Dunning, Baltimore....7-J

International Nutrition Laboratory, Mt. Vernon, Ohio.....5-EE
International Vitamin Sales Corp., N. Y. C..2-N
Irradiated Evaporated Milk Inst., Chicago..9-N

Johnson & Johnson, New Brunswick, N. J..15-AA
Jones Metabolism Equipment Co., Chicago..7-I

Kelley-Koett Mfg. Co., Covington, Ky....8, 9-H
Keystone View Company, Meadville, Pa....10-L

Lakeside Labs., Milwaukee.....8-DD
LaMotte Chem. Prods., Baltimore.....17-L
Lea & Febiger, Philadelphia, Pa.....14-H
Lederle Laboratories, Inc., N. Y. C.....10, 11-S
Lepel High Frequency Labs., N. Y. C.....1-K
Lewis Mfg. Co.—Bauer & Black, Chicago..6-S
Libby, McNeil & Libby, Chicago.....2-V
Liebel-Flarsheim Co., Cincinnati.....7-T
Lilly & Co., Eli, Indianapolis.....3, 4-T
Lily-Tulip Cup Corp., N. Y. C.....3-Q
Linde Air Products Co., N. Y. C.....15-N
Lippincott Co., J. B., Philadelphia....4, 5 Lobby
Luzier's, Inc., Kansas City, Mo.....4-V

M & R Dietetic Labs., Columbus, Ohio....8-I
Machlett Labs., Inc., Springdale, Conn....6-L
Macmillan Company, N. Y. C.....9-I

manuals, together with the Year Books will complete a varied display which visiting physicians are invited to inspect.

OFFICE FURNITURE

W. D. ALLISON COMPANY
Booth 3-N

Manufacturers since 1884 of physicians' fine examining room equipment, this firm will again show a comprehensive line at the Convention. Come in and see the many special features incorporated for your convenience. Allison factory representatives will be glad to discuss the entire line with you.

McCASKEY REGISTER COMPANY
Booth 1-M

With many physicians in the armed forces, intensive demands of practice at home are being aided by the visible and accessible records possible in McCaskey "One Writing" Systems. Instantly available active patient, unpaid account and case history records will be shown in the McCaskey booth. How to meet collection needs under present emergency conditions will be demonstrated.

SHAMPAINE COMPANY
Booth 7-S

This exhibit will present the new de luxe model Steelux Examining Table, the Martin All-Purpose Examining and Rectal Table, the new hydraulic nose and throat chair-table, and other equipment for use in the physician's examination room.

PHARMACEUTICALS

ABBOTT LABORATORIES
Booth 2-T

An extensive line of Council accepted anesthetics, antiseptics, chemotherapeutic agents, hypnotics and vitamin products, including several new research items will be exhibited. A staff of well-informed specialists will be on hand to answer inquiries. Your visit will be most welcome.

ALBA PHARMACEUTICAL CO., INC.
Booth 10-K

The keynote of the Alba Pharmaceutical Company's exhibit is medical defense. Such well known products as Creamalin and Sulfathiazole Alba will be shown. Present investigations are centered around such war needs as anti-malarials, analgesics, hypnotics. Clinical samples and literature will be available to all physicians.

AMERICAN HOSPITAL SUPPLY CORPORATION
Booth 8-U

Visitors to this exhibit will see interesting demonstrations of the ease, rapidity, and economy of plasma preparation with Baxter equipment, by both centrifugation and sedimentation methods. You will also have an opportunity to discuss the latest transfusion methods.

ARLINGTON CHEMICAL COMPANY
Booth 1-L

The growing interest in allergy, and recent figures indicating that a surprising percentage of our population is allergic in some degree, promise considerable interest in this exhibit. The Arlington Chemical Company will show their pollen and protein extracts for cutaneous and intradermal testing, also for hyposensitization.

ARMOUR LABORATORIES
Booths 19, 20, 21-H

A cordial invitation is extended to physicians to visit the Armour clinical display depicting cases of thyroid deficiencies by means of wax models. Physicians interested in endocrinology will find this very informative. Presented also will be a graphic exhibit showing how the extrinsic factor combined with the intrinsic factor produces the hemopoietic principle stored in the liver.

BILHÜBER-KNOLL CORPORATION
Booth 16-M

Increased production is meeting the wartime needs of the civilian population, the Army, Navy and other governmental agencies for such important drugs as Metrazol, Theocalcin and Diladid hydrochloride. For up-to-the-minute information on these drugs, stop by for a visit at the Bilhuber-Knoll booth.

GEORGE A. BREON & COMPANY
Booth 11-I

An exhibit of newer Council accepted preparations has been arranged for you. Well informed representatives will be on hand, prepared to answer questions of physicians interested in these Breon products.

BURROUGHS-WELLCOME & COMPANY
Booth 6-V

An institutional exhibit outlining the firm's scientific, research and technical activities in the fields of pharmacy, chemistry and medicine will be prepared for visitors to the Burroughs-Wellcome booth.

CHURCH & DWIGHT CO., INC.
Booth 14-S

Church & Dwight will exhibit Arm & Hammer Bicarbonate of Soda. Three years before the first meeting of the American Medical Association, this company pioneered in producing bicarbonate of soda in the Western Hemisphere. This year, besides exhibiting various uses of this product in medical practice, the attendants will demonstrate its value as a powder for cleaning the teeth.

CIBA PHARMACEUTICAL PRODUCTS
Booth 13-I

Physicians are cordially invited to see the Council accepted specialties displayed here. These will include Dial, Digifolin, Isarol, Nupercaine and Vioform. Three representatives and an executive of the firm will be in attendance and will gladly discuss Ciba specialties.

CUTTER LABORATORIES
Booth 15-I

Be sure to visit this exhibit and see a demonstration of the Cutter technique for preparing blood plasma in the hospital. A complete line of the Cutter intravenous solutions will also be displayed.

DAVIES, ROSE & COMPANY, LTD.
Booth 1-O

Representatives will be on hand to welcome doctors who visit the booth. They will explain to visitors how the company's resources place them in a position to continue unrestricted to meet the demands for their products and to assure physicians of undiminished dependability and uninterrupted uniformity.

DENVER CHEMICAL MANUFACTURING COMPANY
Booth 10-L

Galatest, the dry reagent for the instantaneous detection of diabetic sugar, will be demonstrated. Physicians will surely find this demonstration very interesting. Basically Galatest is a modification of Nylander's reagent. It is a distinct advance over liquid tests on account of its speed, simplicity and economy and the fact that diabetic patients are easily taught to make the test.

DRUG PRODUCTS COMPANY, INC.
Booth 2-I

Council accepted Pulvoids and Hyposols will be exhibited. These include Pulvoids Digitalis Folium, which are standardized by both the Hatcher-Brody Cat Method and U. S. P. XI Frog Method; Pulvoids Sulfanilamide 5 grains; Hyposols Liver Solution Purified U. S. P. and Solution of Thiamine Hydrochloride Crystals. Representatives will be glad to discuss pulvoids with visitors.

THOMAS A. EDISON, INC.
Booth 9-R

A non-caustic carbon dioxide absorbent is now available for use with rebreathing devices, such as anesthesia machines, oxygen therapy, and basal metabolism tests. Baralyme is not only more efficient but presents no hazard of caustic burns to the face or mucous membranes of the respiratory passages. In constant widespread clinical use for almost two years, Baralyme is being exhibited for the first time at a national medical convention.

ENDO PRODUCTS, INC.
Booth 9-AA

Convention visitors who look behind the finished product will find the manufacture of ampul drugs by today's methods of great interest. Skilled technicians of the Endo laboratories will demonstrate the filling and sealing of several official and N.N.R. preparations with the latest automatic filling and sealing apparatus. The numerous Endo preparations listed in N.N.R. will be on exhibit. Trained representatives will be on hand and souvenirs will be available.

FLINT, EATON AND COMPANY
Booth 5-DD

An entirely new display, featuring a manikin which shows the importance of certain elements in the human body, will be the center of attraction here. Specially trained men will be on hand to discuss calcium therapy with visitors. Calcium-Gluconate-Effervescent and several other important products will be on display.

GANE'S CHEMICAL WORKS, INC.
Booth 9-R

Two successes of chemical science will be featured at the Gane booth: Nicotinamide N.N.R. and Pentobarbital Sodium N.N. Both substances are playing a significa role in modern therapeutics. Competes representatives will be in attendance to discuss the many uses of these products.

GILLILAND LABORATORIES, INC.
Booth 1-P

At this booth will be exhibited the antitoxins, sera and vaccines which this firm produces exclusively. Since its founding in 1882, the firm has specialized in biologics for the medical profession. You are cordially invited to visit this exhibit and become acquainted with their newer products.

HOFFMANN-LA ROCHE, INC.
Booth 6-J

You are invited to make the Roche booth your headquarters during the Convention. Members of the medical and field staffs will be available to discuss the new interesting developments on Prostigmin, Syntropan, and other Roche preparations.

EXHIBITORS

Maico Co., Inc., Minneapolis.....3-U
Mallinckrodt Chem. Works, St. Louis.....10-N
Maltine Co., N. Y. C.....16-I
Marcelle Cosmetics, Chicago.....4-P
Mattern Mfg. Co., F., Chicago....5, 6, 7, 8-AA
McCaskey Register Co., Alliance, Ohio.....1-M
McIntosh Electrical Corp., Chicago.....2-M
McKesson Appliance Co., Toledo, Ohio.....4-L
McKesson & Robbins, Inc., N. Y. C.....3-W
McNeil Labs., Inc., Philadelphia.....12-I
Mead Johnson & Co., Evansville, Ind.....
.....9, 10-DD, 8-K, 1, 2-AA
Medical Bureau, Chicago.....4-T
Medical Case History Bureau, N. Y. C...3-AA
Medical Film Guild, N. Y. C.....14-AA
Medical Mailing Service, Inc., Chicago....14-Q
Mellin's Food Co., Boston.....3-L
Memen Co., Newark, N. J.....10-M
Merck & Co., Rahway, N. J.....18, 19, 20-K
Merrell Company, Wm. S., Cincinnati.....9-J
Meyer Co., Wm., Chicago.....9-M
Mooradian High Freq. Labs., Bogota, N. J...8-M
Mosby Co., C. V., St. Louis.....1-T
Mueller & Co., Y., Chicago.....12, 13-AA
Multifit, Inc., New York, N. Y.....1-J
National Drug Co., Philadelphia.....18-M
Nat'l Live Stock and Meat Board, Chicago..7-V
Nat'l Oil Prods. Co., Harrison, N. J.....16-AA
Nestle's Milk Prods., N. Y. C.....10-O
New York Medical Exchange, N. Y. C.....5-M
O'Leary, Inc., Lydia, N. Y. C.....4-J
Otarion, Inc., Chicago, Ill.....2-K
Oxford Univ. Press, N. Y. C.....15-J
Oxygen Equipment Mfg. Co., N. Y. C.....5-N
Parke, Davis & Co., Detroit.....2, 3-DD
Patch Co., The E. L., Boston.....16-I
Patterson Screen Co., Towanda, Pa.....17-Q
Pelton & Crane Co., Detroit.....1-S
Penick & Ford, Ltd., Inc., N. Y. C.....4-N

HOLLISTER-STIER LABORATORIES
Booth 3-J

Physicians are cordially invited to call and acquaint themselves with this firm's personalized allergy service of nation-wide scope. Information will be available on the various Hollister-Stier allergenic products, all of which are Council accepted.

HOSPITAL LIQUIDS, INC.
Booth 1-P

The Filtrair Compliter using cellulose tubing was introduced to the medical profession at last year's convention, and scored an instant success. Filtrair representatives will be glad to demonstrate its simplicity and added safety. In addition a convenient and economical method whereby every hospital can dry plasma from the frozen state will be demonstrated.

HYNSON, WESTCOTT & DUNNING
Booth 7-J

Mercurochrome and other pharmaceutical specialties of this manufacturer will be exhibited. There will also be a display of diagnostic apparatus and ampule solutions which have been developed in the firm's laboratories in cooperation with physicians. Competent representatives will be in attendance to demonstrate these products, and literature and samples will be available to physicians.

INTERNATIONAL VITAMIN SALES CORP.
Booth 2-N

This "House of Vitamins" will feature a complete line of their Council accepted vitamin preparations. Physicians visiting the booth will find recent developments in vitamin advances of particular interest. The director of research and members of the staff will be present for consultation.

LAKESIDE LABORATORIES
Booth 8-DD

The growing list of Lakeside medications accepted by the Council on Pharmacy and Chemistry attests to the emphasis placed upon high standards in research and control. Members of the scientific staff in attendance at this exhibit will be glad to discuss the pharmacological and chemical aspects of their work.

LEDERLE LABORATORIES, INC.
Booths 10 and 11-S

Sulfadiazine will be the focal point of attention in Lederle's exhibit. Animated charts will dramatize speed of recovery and other advantages under the Sulfadiazine therapy in pneumonia. In section 1 of the exhibit, liver therapy in pernicious anemia will be illustrated. In section 4, an animated chart will show the most common causes of hay fever in the six zones of the United States.

ELI LILLY & COMPANY
Booths 3 and 4-T

Eli Lilly and Company again will present a scientific demonstration. Due to the war, typhus has come into greater prominence and the typhus agglutination test to be demonstrated will be of particular interest to physicians. An agglutination test which indicates protection against pertussis also will be shown. The entire display is new and of interesting design.

McKESSON AND ROBBINS, INC.
Booth 3-W

Two distinct features will comprise this exhibit: a display of Council accepted vitamin products, and a laboratory demonstration showing the methods of instrumental and biological assay of the various vitamin concentrates and mixtures. The technical part of this display in particular should prove extremely interesting to the physician.

McNEIL LABORATORIES, INC.
Booth 12-I

With a specially designed exhibit this year, McNeil Laboratories will show some of their Council accepted products. Of particular interest will be the illuminated photographs tracing Digitalis Duo-test "from plant to patient." Trained members of the staff will be present to discuss with physicians the preparation of this product, and other specialties.

MALLINCKRODT CHEMICAL WORKS
Booth 10-N

Members of the medical profession and their friends are invited to visit the Mallinckrodt exhibit where those U.S.P. and N.F. preparations most frequently used and prescribed by the physician will be displayed. Certain speciality products will also be shown. The attendants in charge will be glad to be of service in answering questions regarding these items.

MALTINE COMPANY
Booth 16-I

An up-to-the-minute display featuring time-honored Maltine with Cod Liver Oil will be offered here. This product is the result of sixty-seven years' continuous research and experience, embodying latest scientific developments.

MERCK & COMPANY
Booths 18, 19, 20-K

A panoramic display of drugs and chemicals will be found at the Merck exhibit. Highlights will be the sulfonamides and zinc peroxide-special medicinals for the treatment of infected wounds; Vinethene, inhalation anesthetic for short surgical procedures; the vitamins; useful drugs; and Mecholyl Chloride, an effective parasympathetic stimulant. A special feature will be a mechanized model reproducing the Merck research laboratories in authentic detail.

WM. S. MERRELL COMPANY
Booth 9-J

The Merrell exhibit will show a wide range of Council accepted products, with emphasis on the fields of vitamin therapy, chemotherapeutics, and local anesthesia. Featured will be Diothane Hydrochloride, a Merrell local anesthetic of profound and unusually long-continued action. All physicians are invited to stop by the Merrell booth for a visit with representatives of "Pioneer American Pharmaceutical House."

NATIONAL DRUG COMPANY
Booth 18-M

Biological products for the prophylaxis and treatment of injuries in industrial accidents, and for protecting preschool and school children against preventable diseases of childhood will be featured at this exhibit, together with a comprehensive line of biochemical pharmaceutical products.

PARKE, DAVIS & COMPANY
Booths 2 and 3-DD

Featured in the Parke-Davis exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various adrenalin chloride preparations.

PETROGALAR LABORATORIES
Booth 13-N

A new and enlightening story on Petrogalar, an aqueous suspension of mineral oil, will be related at the Convention. Beautifully colored anatomical drawings and new literature may be had from our professional representatives. Physicians are cordially invited to visit the exhibit.

RARE CHEMICALS, INC.
Booth 13-H

This exhibit will feature Gitalin Amorphous, a rapid, dependable glucoside fraction of digitalis purpurea; Salysal, Rare Chemicals, the salicylic ester of salicylic acid designed to provide improved salicylate therapy by reducing local gastric irritation to a minimum; and Optochin Hydrochloride, Rare Chemicals brand of ethylhydrocupreine hydrochloride, for pneumococcal infections of the eye.

RIEDEL-de HAEN, INC.
Booth 3-K

Physicians who visit the Riedel-de Haen booth will be welcomed by representatives well posted on the latest developments of bile acid therapy, and ready to discuss specific problems. You are invited to register for your copies of informative literature on the use of this manufacturer's chemical pure bile acids.

SANDOZ CHEMICAL WORKS, INC.
Booth 15-Q

Sandoz products on display will include Gynergen, ergotamine tartrate, the pure principal alkaloid of ergot used as a specific for migraine and as a hemostatic in obstetrics; and Sandoz pure cardioactive glycosides—Digilanid, the crystallized initial glycosides of digitalis lanata; Scillaren and Scillaren-B, the pure cardiodiuretic principles of squill, all standardized gravimetrically and biologically.

SCHERING CORPORATION
Booth 7-L

Schering will exhibit two of their products—Thyroid U.S.P. and Neo-Iopax. Thyroid U.S.P. exemplifies precision standardization on a chemical basis; Neo-Iopax is the safe intravenous urographic medium for visualization of the urinary tract, uterus and tubes, the great vessels, and other regions by the technique of introducing a radio-opaque complex organic iodide which can be rapidly eliminated from the body, unabsorbed.

SCHERING AND GLATZ, INC.
Booth 6-N

Professional service representatives of this firm will welcome visitors to the exhibit and will be pleased to demonstrate Sterisol ampoules, showing the ease and simplicity with which intravenous infusions of dextrose and saline solutions may be administered in the home as well as the hospital. The advantages of this container-dispenser for intravenous fluids will be shown.

G. D. SEARLE & COMPANY
Booths 16 and 17-S

The research activities of G. D. Searle and Co. will again be emphasized in this year's exhibit. Several members of the research staff will be present in addition to the usual complement of sales department representatives. All will be prepared to discuss with physicians any question in reference to Searle research products.

SHARP & DOHME, INC.
Booths 16, 17, 18-O

This modern display will feature Lyovac Normal Human Plasma, other accepted Lyovac and liquid biologicals, and accepted pharmaceutical products. Special representatives from the firm's export department will be on hand to greet Pan-American physicians. A cordial welcome will await all visitors.

EXHIBITORS

Personal Products Corp., Milltown, N. J....1-Q
Pet Milk Co., St. Louis.....6, 7-U
Petrogalar Labs., Chicago.....13-N
Philip Morris & Co., Ltd., N. Y. C.....11, 12-M
Philips Metalix Corp., N. Y. C.....18-I
Picker X-Ray Corp., N. Y. C.....6, 7-DD
Pilling & Son Co., Geo. P., Philadelphia...5-O
Pioneer Rubber Co., Willard, Ohio.....18-J
Prior Co., W. F., Hagerstown, Md.....13-J
Procter & Gamble Co., Ivorydale, Ohio....17-M
Professional Equipment Co., Chicago.....18-Q
Prometheus Electric Corp., N. Y. C.....17-J
Pronto Address. and Mail. Serv., N. Y. C...2-J
Pyramid Rubber Co., Ravenna, Ohio.....13-Q

Radium Chemical Co., N. Y. C.....11-P
Radium Emanation Corp., N. Y. C.....5-L
Rare Chemicals, Inc., Flemington, N. J.....13-H
Registration for Technical Exhibitors.....5-W
Riedel-de Haen, Inc., N. Y. C.....3-K
Ritter Co., Inc., Rochester, N. Y.....5, 6-I
Rose Mfg. Co., Inc., E. J., Los Angeles....20-I
S.M.A. Corporation, Chicago.....7, 8-O
Safety Gas Machine Co., Inc., Chicago.....2-O
Sanborn Co., Cambridge, Mass.....16-P
Sandoz Chem. Works, N. Y. C.....15-Q
Saunders Co., W. B., Philadelphia....15, 16-H
Scanlan-Morris Co., Madison, Wis.....2-H
Schering Corp., Bloomfield, N. J.....7-L
Schering & Glatz, Inc., N. Y. C.....6-N
Scientific Sugars Co., Columbus, Ind.....15-O
Searle & Co., G. D., Chicago.....16, 17-S
Shampaine Co., St. Louis.....7-S
Sharp & Dohme, Inc., Philadelphia..16, 17, 18-O
Siebrandt Mfg. Co., J. R., Kansas City, Mo..7-N
Singer Sewing Machine Co., New York N. Y.....6-Q and 13-P
Sklar Mfg. Co., J., L. I. C., N. Y.....18-L
Smith-Dorsey Co., Lincoln, Neb.....2-R
Smith, Kline & French Labs., Phila..10, 11-AA

SMITH, KLINE & FRENCH LABORATORIES
Booths 10 and 11-AA

One hundred and one years of service to the medical profession is commemorated by this firm's exhibit. Council accepted specialties are on display and trained representatives, as well as members of the Research Department, are on hand to answer questions.

SMITH-DORSEY COMPANY
Booth 2-R

Physicians are cordially invited to visit the Smith-Dorsey Company exhibit, where they will find chocolate flavored Emulsion of Liquid Petrolatum displayed. There will also be a showing of Liver Extract and Thiamin Hydrochloride, both Council accepted. Representatives from the laboratory will be in charge and will have full information regarding products shown.

E. R. SQUIBB & SONS
Booths 13, 14, 15-L

Striking visual methods will be utilized to portray recent studies in the fields of nutrition, endocrinology, biological therapy and chemotherapy. By means of numerous photographs and charts, the latest contributions of the Squibb research laboratories will be graphically demonstrated. Well informed representatives will be on hand to welcome visitors and furnish any information desired on the products displayed.

FREDERICK STEARNS & COMPANY
Booth 18-R

Professional representatives at the Stearns booth have information for physicians on the use of their Council accepted products. You are invited to discuss them on your visit to this exhibit.

WALLACE & TIERNAN PRODUCTS, INC.
Booth 18-P

Members of the Pharmaceutical Division staff will be on hand to greet you, and discuss the Council accepted product Azochloramid employed in the prevention and control of wound infection.

WHITE LABORATORIES
Booth 12-S

An exposition of the typical deficiency manifestations of two accessory food factors has been prepared for the Convention by the research staff of the laboratories. Qualified representatives will demonstrate the special features of the exhibit and present the experimental and clinical background of White's Council accepted vitamin preparations.

WINTHROP CHEMICAL COMPANY, INC.
Booths 21, 22-K, 6-EE

Winthrop is giving recognition to this Pan-American Medical meeting by erecting a most unusual exhibit. The theme is South American. Come to the patio and see the refreshing scene and unique planting. Glance up at the array of flags proclaiming Western Hemisphere solidarity. Make yourself at home in this attractive atmosphere and do not hesitate to call upon Winthrop representatives for whatever aid they may be able to give you.

WISCONSIN ALUMNI RESEARCH FOUNDATION
Booth 3-R

An attractive exhibit demonstrating not only the need for Vitamin D but also its important functions is presented by the Wisconsin Alumni Research Foundation. Members of the Foundation staff will be glad to provide physicians with authoritative information regarding Viosterol and Viosterol-fortified medicinals, bottled Vitamin D Milk distributed by dairies, and irradiated Evaporated Milk.

JOHN WYETH & BROTHER
Booths 15, 16, 17-K

John Wyeth and Brother will exhibit for the first time Dean Cornwall's new canvas depicting Dr. Ephraim McDowell, considered the father of abdominal surgery, preparing to perform the first successful ovariotomy on Jane Crawford. The painting will be shown together with the earlier canvases in the Pioneers of American Medicine series, "Beaumont and St. Martin," "Osler at Old Blockley" and "The Conquerors of Yellow Fever."

PHYSICAL THERAPY AND X-RAY

BEDFORD SURGICAL COMPANY
Booth 7-R

This exhibit will show the full line of Continental x-ray and fluoroscope equipment, also the Continental Council accepted short wave diathermies, and the 1943 lines of medical office equipment.

BURDICK CORPORATION
Booth 18-S

The Burdick Corporation will exhibit their line of physical therapy equipment. This includes Council accepted short wave diathermy units, infra-red and ultraviolet lamps, and the Rhythmic Constrictor for the treatment of peripheral vascular conditions.

CONTINENTAL X-RAY CORPORATION
Booth 8-R

The item of main interest to be viewed at this display is the latest "Panelmatic" Wall Control. Available up to 500 milliamperes it is completely automatic and incorporates many new and novel features.

H. G. FISCHER & COMPANY
Booth 4-O

The best way to look at an x-ray apparatus is with an x-ray. You must get under the finish to see the real difference. To every visitor at the Convention, accordingly, Fischer gives this special invitation: Look under the finish of the new Fischer models of apparatus shown, including Fischer shockproof x-ray apparatus, short wave units, ultraviolet and other generators.

E. FOUGERA & COMPANY, INC.
Booth 4-S

The many diagnostic uses of Lipiodol will be featured at the Fougera exhibit. Roentgenograms illustrating the applicability of Lipiodol in visualizing sinus and fistula tracts, the bronchial tree, the accessory nasal sinuses, the spinal subarachnoid space, and other radiolucent structures will be available for inspection. A cordial invitation is extended to all physicians.

GENERAL ELECTRIC X-RAY CORPORATION
Booths 3, 4, and 5-H

Features of the General Electric x-ray exhibit this year will be x-ray and electromedical units, together with accessory items and supplies, selected for their particular interest to the medical profession in a nation at war. A full staff of representatives will be glad to show new products and explain changes that have come about as a result of the war production program.

HANOVIA CHEMICAL & MFG. COMPANY
Booth 6-O

A new and more modern type of self-lighting ultraviolet quartz lamp will be on display, as well as Sollux Radiant Heat Lamps and short and ultra short wave apparatus. Physicians are encouraged to ask for a demonstration with the new local therapy ultraviolet quartz lamp cooled by air instead of water.

LEPEL HIGH FREQUENCY LABORATORIES
Booth 1-K

Physicians are cordially invited to visit the Lepel booth, where various tube and spark gap model short wave generators will be shown, also the well-known induction type mercury quartz ultraviolet lamp. The medical profession is assured of continued cooperation and service on all Lepel machines as far as war priorities will permit this service.

LIEBEL-FLARSHEIM COMPANY
Booth 7-T

A new, more efficient type of short wave applicator, the L-F Hinged Drum, will be on demonstration here. This is used for treating any area from a small wrist to a large flat area such as the chest, and can be applied in only nine seconds. A complete line of Bovie electrosurgical units will also be on display plus other new and interesting physical therapy equipment.

McINTOSH ELECTRICAL CORPORATION
Booth 2-M

Customers and friends will be cordially welcomed. The latest model of Hogan Brevatherm short wave diathermy apparatus, galvanic current equipment and the Biolite Infra-Red Lamps will be displayed. Representatives will be glad to answer any questions on physical therapy technique and to demonstrate this equipment.

F. MATTERN MANUFACTURING COMPANY
Booths 5, 6, 7, 8-AA

Some new and interesting developments in x-ray apparatus can be seen at the Mattern booths. These will include a Navy mobile portable unit supplied to the U. S. Navy, and a complete line of shockproof x-ray units, such as Mattern units with Aeromax tubes, with air circulator, with Dynamax tubes with rotating anode and with water cooled Thermax tubes, including radiographic and fluoroscopic units of 15 MA, 30 MA, 60 MA, 100 MA and 200 MA capacity.

WILLIAM MEYER COMPANY
Booth 9-M

A special self-contained shock-proof x-ray unit for the head specialist will be exhibited, also a combination dental and medical x-ray unit for clinics and hospitals, or for the joint use of dentist and physician. Another feature of the Meyer exhibit will be a new portable-mobile unit with carrying cases.

MOORADIAN HIGH FREQUENCY LABORATORIES
Booth 8-M

Physicians are invited to see demonstrations of the latest combination short wave diathermy and electrosurgical apparatus. This unit provides current for regular short wave therapy, and there are also available currents, under absolute control, for orificial electrodes (vaginal and prostatic) and for electro-surgery. Representatives will be happy to discuss technical problems on high frequency medical and surgical apparatus.

(continued on advertising page 86)

EXHIBITORS

Smith & Nephew, Inc., New York, N. Y....10-Q
Sorensen Co., C. M., N. Y. C.....4-R
Spencer Corset Co., New Haven, Conn....6-H
Spencer Lens Co., Buffalo, N. Y.....7-K
Spirella Co., Niagara Falls, N. Y.....13-S
Squibb & Sons, E. R., N. Y. C.....13, 14, 15-L
Standard Brands, Inc., N. Y. C.....4-K
Standard X-Ray Co., Chicago.....9-T
Stearns & Co., Frederick, Detroit.....18-R
Sun-Rayed Co., Frankfort, Ind.....16-J
Surgical Publishing Co., Chicago.....17-R

Tampax Inc., N. Y. C.....4-DD
Taylor Instr. Companies, Rochester, N. Y..15-M
Thomas, Publr., Charles C, Springfield, Ill..12-J
Tower Company, Inc., Seattle.....3-I

U.M.A. Inc., N. Y. C.....11-R
Union Carbide Co., N. Y. C.....15-N
United Fruit Co., N. Y. C.....1-H
University of Chicago Press.....1-R

Vegex Corp., N. Y. C.....3-P
Vischer Prods. Co., Chicago, Ill.....12-R

Walker Vitamin Prods., Inc., Mt. Vernon, N. Y.....4-EE
Wallace & Tiernan Prods., Belleville, N. J..18-P
Weck & Co., Edward, Inc., Brooklyn.....14-R
Weco Products Co., Chicago.....10-Q
Westinghouse (X-Ray), L. I. C., N.Y..1, 2, 3-EE
White Labs., Newark, N. J.....12-S
Williams & Wilkins Co., Baltimore.....9-V
Wilson Rubber Company, Canton, Ohio....2-L
Winthrop Chem. Co., N. Y. C.....21, 22-K, 6-EE
Wis. Alumni Res'ch Found., Madison, Wis..3-R
Wocher & Son Co., Max, Cincinnati.....12-O
Wolf X-Ray Prods., Inc., New York, N. Y..19-J
Wyeth & Brother, John, Phila.....15, 16, 17-K

Year Book Publishers, Inc., Chicago.....8-J

Zimmer Mfg. Co., Warsaw, Ind.....4-M

LEGAL MEDICINE

ACCESS TO HOSPITAL RECORDS

SOME LEGAL ASPECTS

T. V. McDAVITT

FROM THE BUREAU OF LEGAL MEDICINE AND LEGISLATION, AMERICAN MEDICAL ASSOCIATION

CHICAGO

A perplexing problem which confronts hospital administrators is the determination of a proper policy with respect to access to hospital records. What about permitting inspection of or furnishing or permitting the making of copies of hospital records of a patient? What should be commonly recognized as the ethical obligations of the hospital to its patients? The hospital occupies a confidential position with respect to its patients analogous to that occupied by the attending physician. It would be illogical for the physician to be bound professionally to keep inviolate information acquired in his professional capacity and yet to permit the same information, reduced to the case record of the patient, to be disseminated indiscriminately. The proper approach, it would seem, is not to determine the question in the light of what liability, if any, is assumed by the hospital in permitting access to the records of a particular patient but rather to view the matter in the light of what duty, if any—legal, ethical, or moral—there is on the hospital to permit access in any particular case. Few decisions, of courts of appellate jurisdiction—usually the only courts whose decisions are available in the published reports—can be found that are squarely in point for the purpose of the present discussion. General principles, then, seem to be the only basis from which to carry on the discussion.

On principle, it would seem that a hospital retains case records for a twofold purpose: (1) It retains them as a trustee, or in some other confidential capacity, for the patient and the attending physician and (2) it retains them as evidence of the care and attention its own servants rendered in the case If, then, a hospital retains case records as a trustee or in some other confidential capacity for the patient and his attending physician, in theory it can make no use of those records except, of course, in defending itself from charges of negligence inconsistent with the rights and interest of the patient and the attending physician. Strictly from the patient's point of view he is entitled to privacy; that is, he has the right that the nature and incidents of his illness be not subjected to public view but only to the view of those who are acting for him and in his interest.

This general rule may be altered possibly in any particular instance by the presence of (1) some specific local law or ordinance on the matter, (2) some express contract between the hospital and the other interested parties or (3) some express hospital regulation or possibly local custom on the subject, concerning which the patient and the attending physician had actual or implied knowledge.

There must necessarily be excepted from any extended discussion instances in which any of the qualifying factors just noted are present. Obviously a general statement with respect to such situations is impossible because of unpredictable factual setups. For instance, we cannot anticipate the exact wording of a state statute or a local ordinance with respect to a governmental hospital that would permit general access to the records concerned. Nor can we hypothecate a discussion on conceivable hospital regulations or local customs with respect to the matter; furthermore, if there is an express contract entered into between the hospital, the patient and the attending physician with respect to the future use of the records concerned, the terms of that agreement, of course, will govern.

Of the qualifying factors mentioned, the most common will be instances in which some state statutes or local ordinance in specific language denominates the records of a governmental hospital as public records. The very concept of a public record implies generally a right on the part of the public to inspect on demand. Even if there is such a statute or enactment relating to a particular governmental hospital, however, it must not be assumed that any person is legally entitled to access to the complete records of that hospital. There may be reason to draw some distinction between the right of the public to view the records maintained for or relating to administrative purposes and the public right to view that portion of the record maintained for pathologic purposes, the clinical records. Furthermore, even if there is an enactment of this type, if there is also a statute prohibiting physicians from disclosing in court information acquired in attending a patient, it is quite generally held that a governmental hospital cannot be compelled to grant access to its records to a third person (*Massachusetts Mutual Life Ins. Co.* v *Board of Trustees of Michigan Asylum for the Insane* (Mich.). 144 N. W. 538) and that such records if subpenaed in court are not admissible in evidence over the patient's objection. (*Davis* v. *Knights of Honor* (N. Y.), 58 N. E. 891; *Sovereign Camp* v. *Grandon* (Neb.) 89 N. W. 448; *Smart* v. *Kansas City* (Mo.), 105 S. W. 709.)

Coming then to the more common situation in which there is no law or enactment requiring a hospital to grant access to its records, nor any express contract relating to the matter; nor any hospital regulation or local custom that might govern the matter of access. Under such circumstances there seem to be no legal grounds on which it might be contended that any person, except possibly the patient or his attending physician, has a right of access to the records, unless by virtue of a subpena where those records are presented in court or before some administrative tribunal. The only persons, it would seem, who can be said to have any legal right of access to a particular case record are the patient, his attending physician or some one designated by the patient to act in his interest. It is not altogether clear that even the patient has a legal right to such access, but in view of the fact that the hospital in its compilation and custody of the record of a particular patient is acting as a trustee, in part, for the patient, the patient's interest should govern the hospital's conduct, and the primary question should not be Has the patient an enforceable legal right to inspect the records? but rather What good reason is there for denying his access? The patient may have an immediate interest in such records, either with a view to litigation or with a view to subsequent treatment: to that extent he may be harmed by a refusal to permit him or his representatives to inspect or copy the records. On the other hand, if the records have been properly kept and the case properly treated, neither the hospital nor the attending physician has any real interest in denying access. In any event, if litigation occurs, the production of the records in court or before some tribunal can be compelled.

In many instances an attending physician may desire access to records with respect to a previous hospitalization of his patient during which the patient had another attending physician. In such an instance it would seem that access should be granted to the present attending physician; clearly so when the patient authorizes the hospital to do so. Even in the absence of such express authorization by the patient, access should be granted on the theory that when a patient places himself under the care of a physician he authorizes that physician to use such measures as are necessary to diagnose his condition and to determine and pursue the proper course of treatment, and obviously the records with respect to a previous hospitalization may often be of material aid to the attending physician. If a patient specifically objects to his attending physician viewing the record, the safest course for the hospital would seem to be to act in accordance with the patient's wishes.

Thus far I have discussed what seems to be the proper policy when the patient or some one acting in his interest seeks access to the records. What then should be done when access is requested or demanded by persons other than the patient or his representatives? A hospital is under no obligation to permit any one, save possibly the patient, his representatives and the attending physician, to examine or copy records of a given patient unless such examination is required by a valid statute, ordinance, regulation or an appropriate court order. For the

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protection of the hospital, evidence of proper authority from the patient should be required of every one, other than the patient and the attending physician, who desires access to the records in a given case, before permitting an examination of such records. Claim agents, attorneys and representatives of insurance companies, unless accompanied by the patient, should be required to present written authority from the patient before access is allowed.

Probably the most frequent request or demand for access to hospital records comes from representatives of insurance companies. An insurance company is not entitled to such access even though it has insured the life, limb or health of a patient. This is true even though the insurance policy involved requires the patient to furnish the information the insurer seeks, for even then the insurer should seek such information from the patient and not from the hospital. Although a contract of insurance contains express or implied authority for a hospital to give out such information, the hospital is not a party to the contract and cannot safely accede to what appears in the policy to be the patient's consent to access. It is a safer practice to require, as a condition precedent to access, the written consent of the patient, dated as nearly as possible to the date access is desired. If the patient refuses to sign a consent at that time or refuses to obtain the desired information for the insurance company, certainly the hospital has no right to do so on its own account.

Cases may arise that require a hospital to deviate from the rules that have been stated and to assume the responsibility of giving information without the consent of the patient, as where the patient is unconscious, delirious or seriously ill so that he himself cannot supply the information but the information is essential to the procuring of some immediate benefit to the patient or to those dependent on him. The proper officer of the hospital may then assume the responsibility, recognizing it as a responsibility; but, generally speaking, in such a case the law would presume the consent of the patient as to what is definitely for his benefit.

Finally, the question often arises as to the right of a hospital either to lend its hospital charts for research work or to use them in staff conferences or other clinical study. Whether the patient's right to privacy should yield to some extent to the cause of medical science, I am not prepared to say, as no legal authority can be found that would permit a hospital to make such use of its case records. The universality of the custom among hospitals in permitting such use of its case records may or may not have a bearing on the question. In any event, the least the hospital can do is to require the consent of the attending physician and to insist that the case records be used and presented in such a way as not to reveal the identity of the patient or of the attending physician.

Of course, nothing that has been said here has reference to the making of reports required by law. Where the law requires a report to be made of a birth, of a communicable or industrial disease, of a crime or of a death, that report must be made, and the law will protect the maker. Such a legal requirement would also doubtlessly protect a hospital in the making of most, if not all, of the reports required by workmen's compensation acts.

This discussion, as noted earlier, has dealt with the right of a demandant to secure access to the hospital records of a particular patient, and no discussion has been given to the liability of a hospital for making an improper, unauthorized disclosure. Conceivably such a liability could be imposed on a hospital, though no case is known in which a court has held a hospital liable for damages for the unauthorized disclosure of hospital records.

In conclusion, the procedure followed in permitting access to a patient's record should conform to the standards of conduct which physicians have prescribed for themselves with respect to the sanctity of confidential communications. A patient cannot well be denied the privilege of access to his own records, nor may this privilege be denied his attending physician, his attorney or any other person acting with his authorization and in his interest. Furthermore, such access should not also be dependent on the written consent of the attending physician. No other person should be accorded access to the records, however, without the patient's written permission, and this rule should be rigidly enforced as against claim agents, insurance adjusters and attorneys. Any other policy would certainly serve no useful purpose for the hospital.

The accompanying form to evidence the patient's consent to access to the hospital records by a particular person is submitted for consideration. Certainly, if the execution of such a consent is required before access is permitted and if the executed form is presented by the hospital, the hospital is in a formidable position as against any potential liability to its patient, and, in following the procedure just suggested, could also rest secure in the knowledge that its actions had been in accord with the highest medical ethics.

CONSENT TO ACCESS TO HOSPITAL RECORDS

To.....[insert name of hospital superintendent]
.....hospital

I) hereby authorize and request you to furnish a copy of the hos-
We)
pital records of.....[insert name of patient] or to allow
those records to be inspected by.....[insert name of grantee].

I) hereby release.....hospital and you personally
We)
from all legal responsibility or liability that may arise from the act I)
We)
have authorized above.

Signature of patient.....
Other signatures.....
.....

Date.....
Witness.....

NOTE.—The signature of the patient alone should be sufficient in all cases except when the patient is a minor or is incompetent, in which cases, in addition to the patient's signature, the signature of the parents or surviving parent or guardian, respectively, should be obtained.

Explanation.—This form when duly executed should be attached to the hospital records of the patient, with a notation as to the date on which the records were viewed or copy was furnished.

No particular form is suggested for a patient's request to be furnished a copy of or to be allowed to inspect his own records. Such a request, however, should be in writing and should be attached to the records with the notations indicated just above.

MEDICAL LEGISLATION

STATE MEDICAL LEGISLATION

Arizona

Bills Passed.—The following bills have passed the house and senate: S. 27-X, to authorize the common council of any town to own, operate and control hospitals, and H. 28-X, to amend the laws relating to the state hospital for the insane by providing that the superintendent of such hospital and the members of the medical staff engaged as psychiatrists need not be residents of the state.

Rhode Island

Bill Passed.—S. 171 has passed the house and senate, proposing to create a cash sickness compensation fund from which eligible employees will be paid weekly benefits of up to $18 for approximately twenty weeks for such periods as, because of physical or mental disabilities, they are unable to perform any services for wages. To create this fund, employers of eligible workers are required to deduct 1 per cent from the first $3,000 of each employee's wages.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Southern California Physicians' Meeting.—The Southern California Medical Association held its one hundred and sixth semiannual meeting at the Mission Inn, Riverside, April 10-11. Dr. Edwin E. Osgood, associate professor of medicine, University of Oregon Medical School, Portland, discussed "The General Principles of Chemotherapy." Included among the California physicians on the program were:

Dr. Harvey E. Billig Jr., lieutenant, M. C., U. S. N. R., Los Angeles, A New Physiolgic Approach to Muscle Reinnervation.
Dr. Edmund F. Cain, Anaheim, Krukenberg Tumor of Ovary with Endocrine Manifestations.
Dr. Frederick A. Bennetts, Los Angeles, Endocrine Therapy in the Management of Prostatic Carcinoma.

One morning session was given over to a symposium on the emergency treatment of traumatic injuries.

CONNECTICUT

Personal.—Dr. George B. Davis, Milford, has been appointed the first full time health officer of Milford, according to *Connecticut Health Bulletin*.——Dr. Louis H. Cohen, Norwich, has been appointed assistant clinical professor of psychiatry and mental hygiene at Yale University School of Medicine, New Haven.

County Secretaries Resign.—Dr. Francis H. Burke, Rockville, has resigned as secretary of the Tolland County Medical Association to go into active service. Dr. Frank T. Oberg, Hartford, for five years secretary of the Hartford County Medical Association, resigned to become a member of the medical staff of Colt's Patent Fire Arms Manufacturing Company. Dr. Austin Kilbourn, Hartford, has been named to fill Dr. Oberg's unexpired term.

Council for Expectant Fathers Observes Fifth Anniversary.—The New Haven Fathers' Council, sponsored by the local health department, marked its fifth anniversary, March 28, with the opening of its eleventh series of meetings for expectant fathers. More than four hundred men have attended these lectures during the past five years. The maternal health problem and the available means for further reducing maternal and infant mortality constituted the theme of the discussions. On May 4 a joint meeting for fathers and mothers will be held as part of the observance of National Child Health Week. Dr. Arnold Gesell, professor of child hygiene and director of the Clinic of Child Development at Yale University School of Medicine, New Haven, will be the speaker.

DISTRICT OF COLUMBIA

The Kober Lecture.—Dr. Charles Armstrong, senior surgeon, U. S. Public Health Service, Washington, gave the Kober lecture, March 28, at Georgetown University School of Medicine on "Recent Studies on Neurotropic Virus Diseases." This lectureship was inaugurated by the late Dr. George M. Kober, once dean of Georgetown, in commemoration of his fiftieth anniversary of graduation from medical school. The lecture is always given on his birthday.

Aleš Hrdlička Retires as Curator.—Dr. Aleš Hrdlička on March 31 retired as curator of the division of physical anthropology in the U. S. National Museum, Washington, according to *Science*. He had held the position since 1910. He has been appointed an associate in anthropology and will continue his scientific research and serve in an advisory capacity. Dr. Thomas Dale Stewart, since 1931 assistant curator, has been named curator and administrative head of the division of physical anthropology. Dr. Hrdlička was born in Humpolec, Bohemia, on March 29, 1869. He graduated at the Eclectic Medical College of the City of New York in 1892 and the New York Homeopathic Medical College and Hospital in 1894. Subsequently he carried on surveys among the insane and other classes, served as associate in anthropology at the New York State Pathological Institute and made anthropologic expeditions to many countries. He was assistant curator in charge of the division of physical anthropology from 1903 to 1910, when he became curator. Dr. Hrdlička was founder of the *American Journal of Physical Anthropology*. He was also founder of the American Association of Physical Anthropology, of which he is now a life member; he served as president from 1928 to 1932. He has held various offices in many scientific societies and has contributed much to the literature on his specialty.

FLORIDA

Personal.—Dr. Shaler A. Richardson, Jacksonville, has resigned as a member of the state board of health to devote his full time to private practice and to his duties of secretary-treasurer of the Florida Medical Association.——Dr. Leland H. Dame, Sebring, formerly health officer for Highlands and Glades counties, has been named director of the Seminole County health unit.

Malaria Control Activities.—Florida has been designated a proving ground for the Southeastern states in a national defense plan for malaria mosquito control activities, newspapers reported on March 18. Leon County has been selected for the trial defense malaria unit and U. S. Public Health officials in Atlanta, Ga., will collaborate. Dr. John E. Elmendorf Jr., Pensacola, director of the bureau of malaria control, Florida State Board of Health, will supervise the program.

LOUISIANA

Director of Industrial Hygiene.—Dr. Sherman S. Pinto, until recently associated with the Massachusetts State Division of Occupational Hygiene, Boston, has recently been named supervisor of industrial hygiene of the state department of health, New Orleans. Dr. Pinto graduated at the University of Nebraska College of Medicine, Omaha, in 1932.

Personal.—Dr. Rudolph Matas, New Orleans, was recently presented with the Medal of Havana, the highest distinction conferred by that city, in commemoration of the anniversary of the birth of Dr. Carlos J. Finlay, Havana, Cuba, according to the state medical journal.——Dr. Walter J. Otis, New Orleans, was elected president of the New Orleans Society for Neurology and Psychiatry at a recent meeting. Dr. Clarence P. May, New Orleans, is the secretary-treasurer.——Dr. Roscoe P. Kandle, Monroe, has been appointed director of the Calcasieu parish health unit.

New Health Buildings.—Plans have been approved for the construction of a $348,000 office building in Baton Rouge to house the state board of health. The new structure will contain the central laboratories of the state board and provide office space for all the division and section heads and for their departments. It is expected to be ready for occupancy in about a year. Plans have also been approved for new health centers in Alexandria and Shreveport to cost about $100,000. Smaller units have been approved for Leesville, De Ridder, Lake Charles and Lafayette, Crowley, Natchitoches, Winnfield, Marksville, Ville Platte, Glenmora, Lecompte, Colfax, Bunkie, Oakdale, Jena, Fillmore, Plain Dealing and Elm Grove. All these proposed centers are in defense areas and will provide accommodations for offices, small laboratories and clinics of the parish health units.

MARYLAND

Personal.—Dr. John Collinson Jr., Baltimore, has been appointed health officer of Cecil County to fill the unexpired term of the late Dr. Clinton A. Kane, Perryville.

Society News.—The Baltimore City Medical Society was addressed among others by Dr. Maxwell M. Wintrobe, Baltimore, March 6, on "Current Views on the Diagnosis and Treatment of Nutritional Deficiencies."——The Upper Eastern Shore Medical Association was recently addressed in Denton by Dr. Charles W. Maxson on activities of the Procurement and Assignment Service and Dr. William S. Love Jr., "Management of Cardiac Emergencies." Both are from Baltimore.

New Director of Industrial Health.—Dr. Starling D. Steiner, Baltimore, has been appointed chief of the recently organized division of industrial health of the Maryland State Department of Health. Dr. Steiner was detailed to the state department by the U. S. Public Health Service in July 1941 for advisory services on occupational diseases and other health hazards in defense and other industries in the state. According to the bulletin of the state department of health, official organization of the division was completed on January 1. Preliminary services effected last year will be expanded and developed under Dr. Steiner's direction, with particular reference to the defense industries.

MICHIGAN

Communicable Disease Control.—Dr. Henry Allen Moyer, Lansing, state health commissioner, has appointed a committee to study the needs for the control of communicable disease which have arisen as the result of the sudden influx of defense workers in certain areas of the state, particularly where no organized health department exists. Members of the committee are:

Dr. Frank Van Schoick, Jackson, representing the state medical society.
Dr. Eldred V. Thiehoff, Lansing, representing the state department of health.
Dr. Edgar E. Martmer, Detroit, representing the Michigan branch of the American Academy of Pediatrics.
Mrs. Lena Schermann, R.N., Mason, representing the Michigan State Nurses Association.
Mr. G. Robert Koopman, Lansing, representing the Michigan Department of Public Instruction.

The appointment of the committee was made on the recommendation of the child welfare committee of the state medical society with the approval of the society's council.

Meeting on Industrial Health.—The Michigan Association of Industrial Physicians and Surgeons held its annual meeting in Flint, April 1. One session was devoted to the theme "What's Going on in Industrial Medicine," covering a discussion of industrial medicolegal services, official state agencies available for industrial hygiene guidance, relationship between the physicians and the general medical profession, industrial toxicology and absenteeism in industry. The speakers on the program included Drs. Grover C. Penberthy, Detroit, "Burns"; John B. Hartzell, Detroit, "Wound Healing"; Nathan K. Jensen, captain, Medical Reserve Corps, U. S. Army, Camp Crowder, Missouri, "Use of Sulfanilamide in Wounds," and Jackson E. Livesay, Flint, "Osteogenesis and Osteoporosis." The annual banquet was addressed by Dr. Clay Ray Murray, New York, on "The Operative Treatment of Fractures."

Alumni Clinic Day.—Wayne University College of Medicine, Detroit, will observe its annual alumni clinic day May 6 with the following program:

Dr. Elmer L. Sevringhaus, Madison, Wis., Proved Preparations in Endocrine Therapy and Their Application.
Dr. Alfred W. Adson, Rochester, Minn., Present Status of the Surgical Treatment of Hypertension.
Dr. John T. Murphy, Toledo, Ohio, X-Ray Treatment of Lesions of the Face.
Dr. George M. Curtis, Columbus, Ohio, Recognition and Management of Acute Injuries to the Chest.
Dr. Flinn F. Morse, Detroit, Diagnosis of Splenic Enlargements.

In the evening, presentation of the annual alumni prize will be made by Dr. Louis J. Morand, Detroit, and Preston W. Slosson, Ph.D., professor of history, University of Michigan, Ann Arbor, will give an address entitled "Making the World Safe for Democracy: Can We Do It This Time?" Dr. Henry A. Luce, Detroit, will be the toastmaster.

MINNESOTA

The Christian Lecture.—Howard B. Andervont, Sc.D., principal biologist of the National Cancer Institute, National Institute of Health, Bethesda, Md., delivered the annual George Chase Christian lecture at the University of Minnesota Medical School, Minneapolis, April 15. His subject was "Recent Trends in Cancer Research."

Abortionist Must Serve Sentence.—Mrs. Georgiann Tennyson, 53 years of age, recently lost her appeal from a conviction for criminal abortion in the supreme court of Minnesota. Mrs. Tennyson, who resided in St. Paul, was convicted by a jury in the district court of Ramsey County, May 23, 1941 and was sentenced by Hon. Hugo O. Hanft, judge of the district court, for a term of not less than two and not more than eight years at hard labor in the Women's Reformatory at Shakopee. Her sentence was doubled because of a previous conviction in 1928 on a similar charge. At that time she was known as Ann Herbert. Mrs. Tennyson was taken to Shakopee, March 6, to commence serving her sentence, according to the state board of medical examiners.

Heart Program for Children.—A program for patients under 21 years of age with heart disease has been launched in Minnesota as a function of the bureau for crippled children of the state division of social welfare. Because of limited funds, only patients from rural sections of Hennepin and Ramsey counties and Scott-Carver, McLeod and Dakota counties will be accepted for care. Children needing convalescent care or acute cases needing hospital care will be hospitalized at the Children's Hospital, St. Paul. Emphasis will be placed on children with rheumatic heart disease who are in need of convalescent care. The state medical journal reports that Dr. Paul F. Dwan, Minneapolis, will be in charge of the clinical work. Dr. Malvin J. Nydahl, Minneapolis, is head of the bureau of crippled children.

NEW HAMPSHIRE

State Medical Meeting.—The one hundred and fifty-first annual session of the New Hampshire Medical Society will be held at the Hotel Carpenter, Manchester, under the presidency of Dr. Charles H. Dolloff, Concord, May 12-13. A symposium on heart disease will be conducted by Drs. Paul D. White, Boston; Ashton Graybiel, Boston; Richard Schatzki, Boston, and Beatrice M. Kesten, New York. Round table conferences will make up the following program:

Dr. William F. Putnam, Lyme, Rational Drug Therapy.
Dr. John H. Kennard, Manchester, Diagnosis and Treatment of Vaginal Bleeding.
Dr. Andrew L. MacMillan Jr., Concord, Methods and Problems of Vision Testing in School Children for Screening Purposes.
Dr. Louise M. Paul, Wakefield, Anesthesia and Analgesia in Obstetrics.
Dr. Jarrett H. Folley, Hanover, The Medical Management of Intestinal Obstruction with Special Reference to the Use of the Miller-Abbott Tube.
Dr. Donald G. McIvor, Concord, Acute Conditions of the Gallbladder.
Dr. Abbott L. Winograd, Nashua, Allergy in Children.
Dr. Raymond H. Marcotte, Nashua, Ménière's Syndrome.
Dr. Ernest E. Irons, Chicago, Aspiration Pneumonia.
Dr. Fred L. Adair, Chicago, Recent Treatment of Gonorrheal Infections in the Female.
Dr. William Halsey Barker, Baltimore, Recent Development in Therapy with Sulfonamide Drugs.

Fifty year membership gold medals will be presented to Drs. Zatae L. Straw, Manchester, and Edwin P. Hodgdon, Lakeport. Dr. Herbert S. Hutchinson, Milford, who has been a member of the society for sixty consecutive years, will be introduced at the session. At the banquet speakers will include Governor Robert O. Blood, Concord, and Dr. Irons on "The Last Illness of Sir Joshua Reynolds."

NEW YORK

Society News.—The Dutchess County Medical Society was addressed on March 13 in Poughkeepsie by Dr. John J. Moorhead, lieutenant colonel, medical reserve corps, U. S. Army, New York, on "Surgical Experiences at Pearl Harbor."——The Medical Society of the County of Westchester was addressed, March 17, by Drs. Wallace H. Cole, St. Paul, Minn., and Philip M. Stimson, New York, on "The Kenny Treatment of Infantile Paralysis."——Dr. Reginald Fitz, Boston, spoke on "Clinical Aspects of Jaundice" at a meeting of the Broome County Medical Society on March 10 at Binghamton.

New York City

The Christian A. Herter Lectures.—Conrad A. Elvehjem, Ph.D., professor of biochemistry, University of Wisconsin, Madison, delivered the annual Christian A. Herter lectures at the New York University College of Medicine, April 6-7. His subjects were "Recent Advances in Our Knowledge of the Components of the Vitamin B Complex" and "The Relation of the B Vitamins to Intermediate Metabolism."

War Time Housing.—The Museum of Modern Art opened an exhibition of war time housing, April 22, in collaboration with the National Committee on the Housing Emergency. The exhibition, which will continue to July 19, aims to show that war materials can be produced in volume to assure victory only if workers are available to man the plants, making housing an essential to the war production program, and to show that the huge expenditures for war housing can to a large extent be conserved for the future use of the communities if the housing is planned with intelligence and foresight. The massing of workers at plants, the rapid construction of housing and the integration of such units into a community are scenes depicted in the exhibition.

Medal Awarded to Dr. MacInnes.—The William H. Nichols Medal, which is awarded by the New York section of the American Chemical Society to stimulate original research in chemistry, was presented to Duncan A. MacInnes, Ph.D., of the Rockefeller Institute for Medical Research at a dinner March 6. According to the New York *Times*, Dr. MacInnes was honored for "distinguished contributions to electrochem-

istry." A native of Salt Lake City, Dr. MacInnes received his Ph.D. at the University of Illinois in 1911. He subsequently served on the staff there and at the Massachusetts Institute of Technology, joining the Rockefeller Institute as associate member in 1926. He was president of the Electrochemical Society from 1935 to 1937.

NORTH CAROLINA

State Medical Meeting in Charlotte.—The eighty-ninth annual session of the Medical Society of the State of North Carolina will be held at the Hotel Charlotte, Charlotte, May 11-13, under the presidency of Dr. Franklin Webb Griffith, Asheville. Among the speakers will be Dr. Paul Dudley White, Boston, on "Recent Advances in the Diagnosis and Treatment of Cardiovascular Disease" and Dr. Fred W. Rankin, Lexington, Ky., President-Elect of the American Medical Association, who will deliver the McBrayer Memorial Lecture on "The Doctor in Washington." Other speakers will include:

Dr. Henry C. Coburn Jr., brigadier general, U. S. Army, Fort Bragg, The Responsibility of the Civilian Physician in the War Emergency.
Dr. Edwin P. Alyea, Durham, Castration for Carcinoma of the Prostate Gland.
Dr. Mark A. Griffin, Asheville, The Treatment of Chronic Alcoholism.
Drs. Grant L. Donnelly and Russell L. Holman, Chapel Hill, The Stimulating Influence of Sodium Citrate on Cellular Repair in the Kidney Injured by Uranium Nitrate.
Dr. Jesse Fred Merritt, Greensboro, Morphine-in-Gelatin for Addiction Therapy.
Dr. Archibald A. Barron, Charlotte, Experience and Treatment of Certain Mental and Nervous Disorders by Prefrontal Lobotomy.
Dr. Jay M. Arena, Durham, The Use of Sulfonamide Derivatives in Syphilitic Interstitial Keratitis.
Dr. Frank R. Lock, Winston-Salem, Bleeding Associated with Intrauterine Death of the Fetus.

There will be a symposium on psychotherapy. The banquet will be addressed by James E. Gheen, New York, on "Circumstances of the Occasion" with Dr. Oren Moore, Charlotte, as toastmaster. Dr. Walter R. Johnson, Asheville, will be presented with the Moore County Medal for the best paper read at the 1941 session for his paper on "Is Diverticulitis of the Colon a Surgical Disease?" The twenty-second annual meeting of the North Carolina Public Health Association will be held at the Hotel Charlotte, May 14 and 15.

OHIO

Personal.—Dr. Dwight J. King, Findlay, has been appointed a member of the state medical board.——Dr. Elizabeth Campbell, who has practiced in Cincinnati since 1895, was recently given an honorary life membership in the American Social Hygiene Association. Dr. Campbell, who recently observed her eightieth birthday, founded the Cincinnati Social Hygiene Society and is now chairman of the Cincinnati Committee on Maternal Health.

Graduate Course in Ear, Nose and Throat.—The sixth annual graduate course in otology, rhinology and laryngology will be held at the University of Cincinnati College of Medicine, May 11-16, with members of the departments of otolaryngology and anatomy presenting the instruction. The course will include refresher work in regional anatomy and cadaver surgery in the field of otolaryngology. The work will include a course on cadavers.

Ophthalmologist Honored.—Dr. William E. Bruner, professor emeritus of ophthalmology, Western Reserve University School of Medicine, Cleveland, was honored during a recent meeting of the Cleveland Medical Library Association. His portrait was presented to the association, and an alcove in the library was named for him. The room was made possible by contributions from the Cleveland Ophthalmological Club. Dr. Bruner was a charter member of the association and had served it as president, secretary, treasurer, chairman of the finance committee and member of the board of trustees.

PENNSYLVANIA

Society News.—Dr. Luther C. Peter, Philadelphia, addressed the Reading Eye, Ear, Nose and Throat Society, April 15, on "Problems in the Management of Concomitant Squint." Dr. Solon L. Rhode, Reading, was chosen president of the society at this meeting, and Dr. Paul C. Craig was reelected secretary.

Pittsburgh

The Mellon Lecture.—Dr. Herbert M. Evans, Morris Herzstein professor of biology and director of the Institute of Experimental Biology, University of California Medical School, San Francisco, delivered the Mellon Lecture, April 23, on "Unsolved Problems in Anterior Pituitary Physiology." The lecture is sponsored annually by the Society for Biologic Research of the University of Pittsburgh School of Medicine.

RHODE ISLAND

Society News.—The Rhode Island Society of Pathologists was addressed at its first scientific meeting at the Woonsocket Hospital, Woonsocket, March 10, by Drs. Benjamin Earl Clarke, Providence, on "The Blood Bank—A General Discussion" and Louis Goodman, Howard, "Chronic Hypertensive Encephalopathy—A Report on Six Cases." Dr. James T. Fallon, Providence, gave a lantern slide demonstration of the "Beriberi Heart and Nonhypertensive Cerebral Hemorrhage." This society was just recently organized.

SOUTH CAROLINA

County Society Opposes State Controlled Selection of Health Officer.—At a recent meeting the Medical Society of South Carolina adopted a resolution expressing "unqualified condemnation of the recently passed state law requiring the health officer of Charleston County to be elected in the primary rather than appointed by the county board of health." The resolution called on the people of the county to seek the repeal of the act in order to prevent lowering the quality of public health services administered. According to a newspaper report, the Charleston County Board of Health earlier in the day had issued a "scathing statement" pertinent to the means taken to insure this action.

TEXAS

New Professor of Anesthesiology.—Dr. Harvey C. Slocum, for two years instructor in anesthesia at the University of Wisconsin Medical School, Madison, has been appointed professor of anesthesiology at the University of Texas School Medicine, Galveston, and director of the department of anesthesia, the John Sealy Hospital, Galveston. Dr. Slocum graduated at the University of Buffalo School of Medicine, New York, in 1932.

Sugar Beet Workers Examined for Tuberculosis.—A new center for the examination of prospective Mexican sugar beet field workers for tuberculosis has been opened at Dallas under the auspices of the Michigan Beet Growers Association, the Texas State Health Department, the health departments of Dallas and San Antonio and the Michigan Department of Health. The first examining center was established in San Antonio. The *Journal of the Michigan State Medical Society* reports that out of 17,600 Mexicans who went through the examining center in San Antonio 400 were rejected because they had tuberculosis. The *Journal* further reports that these examinations were begun in 1937 when it was found that there were many more Mexicans receiving sanatorium care for tuberculosis at public expense than would have been expected from their numbers in the population.

PHILIPPINE ISLANDS

Physician Interned by Japanese.—Dr. Harry D. Kneedler, retired physician of Manila, is among the persons who have been interned by the Japanese in Manila, according to recent newspaper reports. Dr. Kneedler graduated at the Beaumont Hospital Medical College, St. Louis, in 1892. He left his native city of Collinsville, Ill., and in 1900 entered the army medical corps for service during the Boxer Rebellion. He later established private residence in Manila. Dr. Kneedler is 71 years old.

PUERTO RICO

Personal.—Dr. Ezequiel Martinez-Rivera, San Juan, secretary of the Puerto Rico Medical Association, was elected president of the alumni of the Puerto Rico chapter of the Alumni of Maryland. Dr. Martinez-Rivera graduated at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1921.

Society News.—A symposium on "Consideration of Injuries and Disabilities in Connection with Hostile Aircraft Attacks on Civilian Population" was conducted at a meeting of the Medical Society of Humacao County, March 1. Among the speakers were Drs. Luis Manuel Morales y Garcia, José Noya-Benitez, Rafael Lopez Nussa, Peter E. Sabatelle, Juan A. Pons, Federico Hernandez Morales, Jacob Smith and Ramon M. Suarez, all of San Juan.——Drs. José Forastieri and Juan J. Nogueras of Caguas were elected president and secretary respectively of the Guayama Medical Society, April 5. The meeting was addressed by Drs. Oscar G. Costa-Mandry, Ramon Fernandez Marchante, Guillermo Ruiz-Cestero and Rafael A. Vilar-Isern, San Juan.

GENERAL

Goiter Specialists Cancel Meeting.—The Council of the American Association for the Study of Goiter has announced that the annual meeting scheduled for Atlanta, Ga., June 1, will not be held this year on account of the present emergency.

Directory Late.—Because of the great difficulties occasioned by the unusual and large number of changes of address of physicians and because of the difficulty of maintaining necessary office personnel, there will be an unavoidable delay in the issuance of the 1942 American Medical Directory. The new edition will appear about the first of September rather than in June or July as in previous years.

Special Meeting for Women Members at A. M. A. Session.—A general meeting has been arranged for all medical women in attendance at the annual session of the American Medical Association in Atlantic City. The meeting will be in the form of a subscription dinner June 10 at the Ambassador Hotel at which "Service in War Time" will be the theme of discussion. The speakers will include Mr. Stuart Rand, Boston attorney, and Col. George Baehr, Washington, D. C.

American Diabetes Association.—The annual session of the American Diabetes Association will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 7, under the presidency of Dr. Herman O. Mosenthal, New York. Speakers will include:

Dr. Franklin B. Peck, Indianapolis, Action of Insulin.
Dr. Joseph T. Beardwood Jr., Philadelphia, The Diabetic in the Defense Program.
Dr. Cyril N. H. Long, New Haven, Conn., Endocrine Control of Carbohydrate Metabolism in Relation to Human Diabetes.
Dr. Samuel Soskin, Chicago, The Storage and Significance of Tissue Glycogen in Health and Disease.
Dr. Eaton M. MacKay, La Jolla, Calif., Acidosis.
Dr. Harold E. Himwich, Albany, N. Y., Hypoglycemic Reactions.

Dr. William Muhlberg, Cincinnati, will deliver the Banting Memorial Lecture at the dinner session in the evening on "An Analysis of Statistics Bearing on Diabetes Mellitus."

Association of Cereal Chemists.—The American Association of Cereal Chemists will be held at the Edgewater Beach Hotel, Chicago, May 18-21. Sessions have been arranged under the following headings: Agronomy and Milling Technology; Laboratory Baking Methods; Malting and Brewing; Protein Symposium; Bread Baking Technology; General Analytical Methods; Symposium on Flour and Bread Nutritional Supplements. A statistical clinic will be held jointly with the biometric section of the American Statistical Association. Among the speakers on the general program will be Thorfin R. Hogness, Ph.D., Chicago, on "Respiratory Enzymes and Their Relationship to Some of the Vitamins"; Conrad A. Elvehjem, Ph.D., Madison, Wis., "The Water Soluble Vitamins," and Ross A. Gortner, Ph.D., University of Minnesota, Minneapolis, who will give the Osborne Medal Award address on the "Plant Proteins."

Meeting of Eye and Ear Specialists.—The thirtieth annual session of the Pacific Coast Oto-Ophthalmological Society will be held at the Benson Hotel, Portland, Ore., May 11-13, under the presidency of Dr. Ralph A. Fenton, Portland, whose address will be entitled "War and Peace." Among the speakers will be the following:

Dr. Gordon B. New, Rochester, Minn., Immediate and Later Care of Facial Injuries.
Dr. Augustus G. Pohlman, Los Angeles, Hearing Aids.
Dr. Phillips Thygeson, New York, The Sulfanilamide Group.
Dr. John E. Raaf, Portland, Perimetric Diagnosis of Intracranial Lesions.

A special motion picture program has been planned as well as the following instruction courses: manifest refraction, eye surgery, treatment of acute and chronic sinusitis, endaural surgery, recent advances in ophthalmology, ophthalmic injuries in war, audiometric interpretation, sulfa-therapy, sinus surgery, and lesions of the larynx.

Examinations in Urology.—The American Board of Urology, Inc., announces that, if a sufficient number of applications are received from urologists fulfilling all the requirements of applicants, a meeting for the purpose of examining candidates for certification will be held in some eastern city at the same time or shortly following one of the national medical meetings, the place and time to be published later. This decision is a response to the many urgent requests for a second examination from urologists who are now in the medical corps of the army or navy services and from others who expect to be called for active duty before the usual time of the board's yearly examination, which is in February. Application blanks may be obtained from the secretary, Dr. Gilbert J. Thomas, 1409 Willow Street, Minneapolis. These should be completed and returned to the secretary without delay. Candidates who wish to be examined at this proposed meeting should start the preparation of fifty case histories at once.

Special Society Elections.—Dr. Paul D. White, Boston, was recently elected president of the American Heart Association at its meeting in New York. Other officers include Drs. Roy W. Scott, Cleveland, vice president; T. Homer Coffen, Portland, Ore., treasurer, and Howard B. Sprague, Boston, secretary.——Dr. Elmer L. Henderson, Louisville, was named president-elect of the Southeastern Surgical Congress at the recent session in Atlanta and Dr. Edward W. Alton Ochsner, New Orleans, was inducted into the presidency. Dr. Frederick J. Waas, Jacksonville, was chosen vice president and Dr. Benjamin T. Beasley, Atlanta, was reelected secretary-treasurer. The 1943 session will be in Louisville.——Dr. Paul R. Cannon, Chicago, was chosen president of the American Association of Pathologists and Bacteriologists at its annual meeting, April 2-3, in St. Louis. Other officers include Drs. Wiley D. Forbus, Durham, N. C., vice president; Howard T. Karsner, Cleveland, secretary, and Alan R. Moritz, Boston, treasurer. The gold headed cane of the association was presented to Dr. James Ewing, New York.

Society for Clinical Investigation.—The thirty-fourth annual meeting of the American Society for Clinical Investigation will be held at the Chalfonte-Haddon Hall, Atlantic City, May 4, under the presidency of Dr. William Dock, New York. The program includes the following speakers:

Drs. William W. Beckman and Kendall Emerson Jr., New York, A Study of Calcium Metabolism in Nephrosis.
Dr. Jacob Lerman, Boston, Insulin Resistance.
Drs. Robert H. Williams and Enrique Egana, Boston, Alterations in Biologic Oxidations in Thyrotoxicosis.
Drs. Willis F. Evans and Harold J. Stewart, New York, The Effect of Cigaret Smoking on the Peripheral Blood Flow.
Drs. Byron E. Hall, Horton C. Hinshaw, Rochester, Minn., and Karl H. Pfuetze, Cannon Falls, Minn., The Effect of Promin on the Blood of Tuberculosis Patients.
Drs. Lawrence H. Beizer and Charles H. Watkins, Rochester, Sternal Marrow in Aplastic Anemia.
Drs. Robert A. Goodwin Jr. and Maxwell Finland, Boston, Studies on the Persistence of Pneumococci in Patients with Pneumonia Treated with Sulfonamide Drugs.
Drs. Robert F. Parker, Cleveland, and Robert H. Green, New York, The Effect of Separate Inoculation of Vaccine Virus and Immune Serum on the Protection Test.
Dr. Joseph E. Smadel, New York, Aspetic Meningitis of Known and Unknown Etiology.

National Gastroenterological Association.—The seventh annual convention of the National Gastroenterological Association will be held at the Hotel Astor, New York, June 3-4, under the presidency of Dr. Anthony Bassler, New York. The preliminary program lists the following speakers, among others:

Dr. Marvin H. Smith, Miami, Fla., The Role of the Gram-Positive Diplococcus and Other Pathogens in the Stagnant Colon.
Drs. George P. Miley, Philadelphia, and Elmer W. Rebbeck, Pittsburgh, The Knott Technic of Ultraviolet Blood Irradiation as a Control of Infection in Peritonitis.
Drs. Edward W. Alton Ochsner and Michael E. DeBakey, New Orleans, Amebic Hepatitis and Amebic Hepatic Abscess.
Dr. George T. Pack, New York, Surgery of Gastric Carcinoma.
Drs. Frank E. Hamilton and George M. Curtis, Columbus, The Action of Drugs on the Motility of the Human Stomach.
Dr. John F. Erdmann, New York, Surgical Treatment of Gallbladder Disease.

A round table conference will be held the first day on "The Action of Drugs on the Gastrointestinal Tract." Col. John J. Moorhead, M. C., U. S. Army, New York, will address a military luncheon Thursday on "Treatment of Casualties at Pearl Harbor."

Annual Report of Mellon Institute.—A total of $1,378,752 to carry on the various science projects was expended by the Mellon Institute of Industrial Research, Pittsburgh, during the fiscal year ended March 1, according to its twenty-ninth annual report. The industrial research staff was expanded during the year to 205 fellows from 187 and to 150 fellowship assistants from 114. Nine new industrial fellowships started their researches during the year. The report discusses the studies of modified cinchona alkaloids and related synthetics carried on by the department of research in pure chemistry. In the results to date there has been no beneficial action of quinine which cannot be accomplished equally well by hydroxyethylapocupreine. In studies for the twelfth revision of the U. S. Pharmacopeia different assay procedures for new synthetic organic chemicals have been evaluated. The projects subsidized by the Mellon Institute at the Institute of Pathology of the Western Pennsylvania Hospital have related to chemotherapeutic and bacteriologic researches largely pertaining to the effects of the sulfonamides. Industrial Hygiene Foundation, which maintains its headquarters at the institute, has been

studying sick absenteeism in the industries and a project on fatigue is under way. The multiple fellowship on food varieties at the institute has begun a survey of food flavors. The present emergency has caused an expansion in the activities of certain fellowships; however, the range of the programs of most fellowships has regard for postwar economic problems.

Accidental Deaths Increase in 1941.—A total of 101,500 persons were killed in accidents in 1941 as against 96,885 killed in 1940, according to an annual report from the National Safety Council. Motor vehicles were responsible for 40,000 deaths during 1941 as compared with 34,501 in 1940. Accidents in the home aggregated 32,000 as against 33,000 reported during the previous year. Occupational accidents accounted for 18,000 deaths in the latter year and 17,000 in 1940. The report pointed out that the traffic deaths of 40,000 was an all-time high. Traffic deaths went up 16 per cent and travel increased 11 per cent, giving a mileage death rate increase of 4 per cent. In industry the 6 per cent increase in deaths was far less than the 17 per cent rise in employment in the manufacturing industry and the 9 per cent gain in total nonagricultural employment. A total of 9,300,000 persons were injured during 1941, and an estimated cost for both injuries and accidents was $3,750,000,000. This cost covers both fatal and nonfatal accidents and includes wage losses, medical expense, the overhead costs of insurance, and property damage from motor vehicle accidents and fires. There were other large but less tangible losses, such as interruption of industrial production. Persons 65 years and older were the only group with a better accident record in 1941 than in 1940. The school child group (5 to 14 years) had a 10 per cent increase, with deaths totaling 7,100. This increase was exceeded only by the 12 per cent rise shown for the 15-24 year group, in which deaths totaled 14,250. The 25-64 year group accounted for 45,350 fatalities —a 5 per cent rise. There were 7,150 deaths of children under 5 years of age, a 4 per cent increase. Deaths from falls were about the same in 1941 as in 1940—about 26,000 each year. Falls are second only to motor vehicle accidents as a cause of accidental death. Deaths from burns were about 6,900 in 1941, a 5 per cent drop from 1940. Drownings increased about 2 per cent to 7,000. Last year was the first one in the last decade in which no catastrophe took as many as 100 lives. Forty-one cities of 10,000 or more completed 1941 without a fatal motor vehicle traffic accident. The largest was Chelsea, Mass., with a population of 41,260. The second and third largest perfect cities were University City, Mo., and Hagerstown, Md. About 13,900 pedestrians were injured fatally in motor accidents in 1941, an 11 per cent increase over 1940. Nonpedestrian deaths increased 19 per cent to 26,100. Fatal falls accounted for almost 16,300 home accident deaths in 1941, 2 per cent fewer than in 1940. Home falls accounted for slightly more than half the home death total. Burns and fires in homes killed about 5,500 persons, a 4 per cent decrease over the previous year. Falls on stairs and steps are the most important specific type of serious home accident. Railroad accidents caused 4,647 deaths in the first eleven months of 1941, 11 per cent more than the comparable 1940 total of 4,188. There were four fatal aviation crashes during 1941 in the domestic operations of scheduled air carriers resulting in the death of thirty-five passengers and nine members of the crews. Passenger miles flown totaled about 1,480,000,000, indicating a passenger death rate of 2.4 per hundred million miles.

Deaths in Other Countries

Kenneth Mackenzie, Auckland, New Zealand; graduated at Edinburgh University in 1911; fellow of the Royal College of Surgeons; since 1914 an honorary surgeon to the Auckland Hospital; examiner in physiology to the University of Otago, 1914-1916; founder of the Auckland Clinical Society, serving as president in 1923; at one time president of the Auckland division of the British Medical Association; died on January 15, aged 57. Mr. Mackenzie served in the New Zealand Medical Corps from 1917 to 1918 with the rank of captain.

CORRECTION

Dr. J. McKeen Cattell Founder of Psychology Laboratory.—In THE JOURNAL, March 28, page 1151, Dr. McKeen Cattell, associate professor of pharmacology in charge of the department at Cornell University Medical College, New York, was erroneously reported to be the founder of the laboratory of psychology at Columbia University. The founder of the laboratory was James McKeen Cattell, Ph.D., the father of Dr. McKeen Cattell, pharmacologist.

Government Services

Medical Director Creel Retires

Medical Director Richard H. Creel, San Francisco, director of activities of the U. S. Public Health Service of Western States, Alaska and Hawaii, has retired from the service after more than forty years' service. He has been succeeded by Dr. Walter T. Harrison, senior surgeon and liaison officer between the U. S. Public Health Service and the war department, San Francisco. Dr. Creel was born in Missouri in 1878 and graduated at the University Medical College, Kansas City, in 1900. He has been with the U. S. Public Health Service since July 27, 1902. His research activities have covered plague, cholera and typhoid dissemination.

Annual Report of Food and Drug Administration

A report has been issued for the Food and Drug Administration for the fiscal year ended June 30, 1941, the first in which the administration was operated as a unit of the Federal Security Agency. This year was also the first in which all provisions of the Food, Drug and Cosmetic Act of 1938 became fully effective. During the year, a dangerously contaminated drug product and a poisonous permanent wave solution, both widely distributed, were removed from the market. In March 1941 a fatality occurred from the permanent wave solution, and during April and May 17,061 units in possession of some 500 beauty shops licensed by the manufacturer to administer it were seized in 1,906 actions. Eyelash dyes containing toluylenediamine were the object of six seizures, and prosecution proceedings were instituted against the firm responsible for their shipment in interstate commerce.

On March 21, 1941 the administration started an investigation to remove from commercial channels thousands of sulfathiazole tablets contaminated with as much as 60 per cent phenobarbital. This task involved 3,205 man days of work, 12,187 visits to distributors, physicians and druggists, excluding an additional 25,000 known visits by cooperating agencies and necessitated the examination of about 1,593,000 invoices and 592,000 prescriptions. At the start of the investigation some 122,600 contaminated tablets were still outstanding and unrecovered. There were 23,324 tablets, including sixty-six separate lots of contaminated tablets, recovered finally. It is presumed that the 99,300 tablets which remained outstanding at the conclusion of the investigation may be presumed to have been consumed, or voluntarily destroyed, or taken up as samples by state and local health departments. The task of discovery was complicated by reason of the failure of all those handling the tablets to provide a system for recording control numbers.

Actions directed against dangerous drug preparations resulted in sixty-seven seizures and twelve prosecutions as compared with twenty-five seizures and one prosecution in 1940. On July 1, 1940 the requirement of the U. S. Pharmacopeia that absorbent cotton must be sterile became effective. Twelve lots were found to be not sterile. A total of 1,145 official samples of proprietary medicine for human use was examined. Seizures increased from forty-six to seventy-eight and the number of shippers against whom criminal prosecution proceedings were instituted from eleven to thirty-five. There were only six seizures of deceptively packaged drugs made as compared with twenty-three of the previous year.

During the year, 1,376 new drug applications were received, making the total since June 25, 1938, when the new drug section of the act became effective, 4,128.

A total of 470 official samples of vitamin products was assayed for vitamin control. Of these 391 were from interstate shipments and 79 were imports. Seventy-nine interstate shipments, or about one sixth of the total examined, were found to be deficient in one or more of the vitamins.

Terminated criminal actions during the fiscal year based on violations of the Food, Drug and Cosmetic Act numbered 183 and resulted in the imposition of fines totaling $35,262; ten jail sentences were imposed, one of which was actually served and the remainder were suspended and the defendants placed on probation. There were 142 pleas of guilty, 32 pleas of nolo contendere and 9 contested cases. Of the last group, 2 defendants were acquitted.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 14, 1942.

Children Have Stood Air Raids Well

Inquiries about the effect of air raids on London school children have been made by the physicians working daily in school rest centers and in examining those registered for evacuation. The unanimous response is that there is no evidence of nervous disorder or shock arising from air raid experience but that the children are standing up to the raids as well as or better than adults. This statement is contained in the interim report for 1940 of Dr. W. Allen Daily, medical officer and school medical officer for London. He also states that air raid casualties generally in London did not reach the number anticipated and for which hospital preparation had been made. His report also shows that in spite of the difficulties produced by the war the health of London has not been unsatisfactory and that the vast and complex organization of the public health department has continued to provide not only for the sick who apply to its hospitals but also to carry on its preventive work. No case of smallpox was notified during the year; London has been free from the disease since 1934. There was no serious epidemic of infectious disease.

Women's Help in Civil Defense

A tribute to the women of Britain for civil defense work was paid by the home secretary, Mr. Herbert Morrison, at a conference held by the Women's Voluntary Services. Two things had impressed him: the enormous voluntary effort mobilized in the service of British homes after the enemy air attacks and the ability of women in large scale organization. The movement had organized the part time and whole time voluntary services of over a million women. They would play a part in the building of a better and wiser society after the war. Among their services were the organization of rest centers after air raids, loading canteens and driving them off in convoy at night, sometimes into the heart of an air raid, collecting salvage, collecting and distributing emergency clothing for the bombed out, helping British restaurants and school canteens, getting evacuated children settled down, running clubs for mothers and distributing overseas gifts.

The Destruction of the Museum of the Royal College of Surgeons

The destruction wrought by German bombs in the greatest anatomic and pathologic museum in the world has been described in previous letters. Much of what was destroyed is irreplaceable. The report of the Royal College of Surgeons for 1940-1941 enables a more detailed account to be given. The total loss of specimens was 39,259 out of 65,827. Before the bombs fell, most of the specimens had been removed to the basements, which had been reinforced. But unfortunately on May 10, 1941 a heavy bomb struck the museum and store rooms, and incendiaries increased the damage. Fallen girders broke open the basements below, and on the following days there was a heavy rainfall which drenched the exposed specimens. In the anatomic series 1,207 specimens survived out of 2,569. The famous collection of John Hunter is the basis of the museum and had historical as well as scientific value. The loss of his specimens is therefore irreplaceable. In the osteologic series only 94 out of 1,655 hunterian specimens survive and 6,209 out of 15,545 other specimens, but the whole odontologic series, which includes hunterian specimens, remains. In the physiologic series nearly half of the 5,400 hunterian specimens remain, but only 2,026 of the others, which numbered 14,850. In the human and comparative teratologic series only 23 out of 170 hunterian specimens survive, but the other specimens have largely escaped damage. The greater part of the hunterian pathologic series remains, but the others have been reduced to a fifth. The Army Medical War Collection (formed after the previous war) has been reduced from 3,000 to 100. The replacing of this collection by specimens from the present war has already begun. All the mummy specimens and the historical collection are lost. The instrument collection of 2,500 has been reduced to 2,000. The salvaged specimens have been transferred to seventeen widely separated places. For this work the American Ambulance Service, now working in Britain, has provided the transport.

The Mode of Action of Chemotherapeutic Agents

At a meeting of the Biochemical Society a discussion took place on the mode of action of chemotherapeutic agents. Dr. G. M. Findlay classified chemotherapeutic action as direct and indirect. Except for intestinal parasites it was necessary that the drug should be absorbed into the body, penetrate to the site of the parasites and not be excreted or converted too rapidly into an inert form. When the drug had been brought to the parasite, three stages might be distinguished: adsorption, interference with metabolism and death of or such injury to the parasite that it was destroyed by phagocytes. When adsorbed the drug might prevent an essential food factor from being absorbed by the parasite or cause a breakdown in metabolism by combining with a specific substrate or competing with an essential cell metabolite for an enzyme or coenzyme. Specific immune serum and sulfapyridine did not compete for the same receptor group in the pneumococcus and might therefore enhance each other. Indirect action might produce such changes in the environment that parasites could no longer grow.

Sir Henry Dale said that one of Ehrlich's notable contributions to the subject was a theory which, though it probably would not survive unmodified, had given a tremendous stimulus to research. His explanation of the action of certain dyes on trypanosome infection as confined to injury of the reproductive power of the parasite seemed at the time artificial and unconvincing. But when Dobell and Laidlaw were able to grow Endameba histolytica in permanent culture it was found that the action of emetine was just of this type. Effective chemotherapy was usually, if not always, a war of attrition. Sulfaguanidine seemed to owe its effectiveness in bacterial dysentery to low solubility, enabling it to keep up a steady low concentration in contact with the infected mucous membrane. Aromatic diamidines might owe part of their superiority to limited solubility. He suggested as a means of advancing chemotherapy the keeping alive and reproduction indefinitely of trypanosomes in artificial culture and the discovery of a method of treating a strain of trypanosomes which had acquired drug resistance so as to restore the normal susceptibility.

Cupboards for the Nation's Food

One thing the government has succeeded in is ensuring that the people, though rationed, have sufficient food. Ample precautions have been taken against destruction of food supplies by enemy action. The hundredth "store cupboard"—single storied buildings each covering an area of 25,000 square feet—has been completed, and forty more, the beginning of a new program of one hundred and twenty-seven, have been put in hand. The store cupboards are camouflaged buildings of prefabricated steel with concrete floors, brick walls, steel and corrugated asbestos roofs. They are dotted about the country. The hundred completed take something like 1,000,000 tons of the nation's reserve food and raw supplies. They were completed in eight months and each cost $50,000.

RIO DE JANEIRO

(From Our Regular Correspondent)

March 26, 1942.

Vital Statistics of Rio de Janeiro

The vital statistics returns for the city of Rio de Janeiro for 1941 have just been published. The population of the city as of July 1, 1941 was 1,813,730. The total number of deaths from all causes was 32,440, giving an annual crude death rate of 17.89 per thousand of population, which makes 1941 a bad year, as there is no reduction of the death rate compared to the five year period 1936-1940, for which the mean annual crude death rate was 17.43 per thousand. The number of live births registered was 34,966, giving a birth rate of 19.28 per thousand of population. The vital index was 108, a rather low figure to express the vitality of the population. The number of deaths for the age group 0-1 year was 6,306, which corresponds to the high figure of 180 infant deaths per thousand live births. First as a cause of death are "all forms of tuberculosis," with the total of 5,731 deaths (5,588 from tuberculosis of the respiratory apparatus), or 17.67 per cent of the total of deaths from all causes—a crude specific death rate of 316 per hundred thousand of population. The rest of the "infectious and parasitic diseases" caused 4,291 deaths, which, with the deaths from tuberculosis, gives a total of 10,022 deaths from infectious and parasitic diseases (30.89 per cent of the deaths from all causes). Of this total 130 were from typhoid (7.17 per hundred thousand of population). The other principal infections were dysentery, mainly bacillary, measles 218, or 12.02 per hundred thousand, whooping cough 283, or 15.60 per hundred thousand, diphtheria 192, or 10.59 per hundred thousand, malaria 219, or 12.07 per hundred thousand, and leprosy 57, or 3.14 per hundred thousand. Cancer has caused 1,205 deaths, or 66.44 per hundred thousand, thus being on a continuous increase since 1903-1907, when the mean annual crude death rate was 34.75. The second most important single group of causes of death is that of the diseases of the circulatory system, represented by a total of 5,593 deaths, or 17.24 per cent of the deaths from all causes, which corresponds to the rate of 308 per hundred thousand. Out of this total 3,927 deaths have been reported as due to diseases of the heart, which corresponds to the rate of 217 per hundred thousand. This represents a great increase in the number of deaths from diseases of the circulatory apparatus. The crude specific death rate from diseases of the cardiovascular system is on the increase in Rio de Janeiro, as clearly shown by these figures: 173 in 1926-1930, 174 in 1931-1935, 212 in 1936-1940 and 308 in 1941. The third leading group of causes of death is the diseases of the digestive apparatus, represented by 4,986 deaths, or 15.37 per cent of the deaths from all causes, which corresponds to 275 deaths per hundred thousand of population. The bulk of these deaths is reported under the title of "diarrhea and enteritis under 2 years" (3,416 deaths), which is the largest contribution to the infant mortality; an average of 38 per cent of the infant deaths, in Rio de Janeiro, is classified as due to diarrheal diseases. The diseases of the respiratory apparatus caused 3,893 deaths, or 12 per cent of the total from all causes, and to a death rate of 215 per hundred thousand. Puerperal septicemia and infection was the cause of 124 deaths, or 43.05 per cent of the maternal deaths (one death in 282 live births). Violent deaths were 1,205, or 3.71 per cent of the total of deaths from all causes, which corresponds to the rate of 66.44 per hundred thousand of population.

A New University School of Nursing

The International Health Division of the Rockefeller Foundation has decided to cooperate with the University of São Paulo to found a school of nursing of a high standard. Miss Mary E. Tennant, staff member of the International Health Division, has arrived in São Paulo to study local conditions. The first school of nursing of high standing in Brazil, the Ana Neri School of Nursing, is now in operation at the University of Rio de Janeiro. This pioneer school was founded in 1923 at the Brazilian Federal Health Service soon after the visit of Dr. Carlos Chagas to the United States as a guest of the Rockefeller Foundation. The school a few years ago was transferred to the university. It trained the first registered nurses to operate the nursing division of the Rio de Janeiro city health department under the supervision of Mrs. Ethel Parsons, then a member of the staff of the Rockefeller Foundation. The work of Mrs. Parsons has been highly praised for the introduction of Public Health Nursing in Brazil. The School for Nurses of São Paulo is the second institution of this kind to be operated in connection with a University in Brazil.

BCG Immunization

The high incidence of tuberculosis in Rio de Janeiro makes the steps taken against this disease one of the most important public health problems. Among the measures that the city health department is putting into practice, BCG immunization is carried out in cooperation with the Ataulfo de Paiva Foundation, under the supervision of Dr. Arlindo de Assis, a skilled bacteriologist who is now studying special phases of the antituberculosis work. To be able to ascertain exactly the results of this immunization, Dr. de Assis is carefully recording every detail in connection with the present work. The high prevalence of tuberculosis in the city enables Dr. de Assis to give BCG vaccine to every newborn infant without taking into consideration whether the child lives in a tuberculous environment or not. As a routine the immunization is done on the third, the fifth and the seventh day after birth, but occasionally it may begin even on the second day or as late as the tenth day. In the families known to be free from tuberculosis the immunization is done even on the fifteenth and the twentieth day. After that time, however, the immunization is always postponed to six months later, when the child will be tuberculin tested, and always if the result of this test is negative. After the immediate postnatal period, all persons may be immunized, regardless of age, provided they will not react to raw tuberculin.

Brief Items

Dr. A. Lemos Torres, director of the Paulista School of Medicine in São Paulo, died recently in that city. Prof. Lemos Torres was an able internist, known also in England, France, Germany and the United States, where he visited in 1919, 1921 and 1923.

A new course of hygiene and public health has been founded in connection with the Hygienic Institute of the University of São Paulo to train sanitarians for the positions of health officers in the departments of health in Brazil. There is another course of the same kind, run in connection with the Oswaldo Cruz Institute, founded in 1926 in the University of Rio de Janeiro and recently transferred to the institute in this city.

A Brazilian academy of military medicine has been founded in Rio de Janeiro to study the special subjects of military medicine. The members of the academy are elected from the staff physicians of the army, the navy and the air service. Dr. Florencio de Abreu, colonel of the medical corps of the army, has been elected president of the academy.

Dr. Oscar Silva Araujo, noted dermatologist and leprologist, who assisted Prof. Eduardo Rabello in 1920 in the establishment of the Division of Venereal Diseases in the Brazilian Public Health Service, died recently in Rio de Janeiro. Dr. Silva Araujo succeeded Professor Rabello as chief of the division of venereal diseases and was well known in his specialty abroad. He has published many contributions on dermatology, syphilology and leprosy.

Deaths

I. Seth Hirsch ✠ New York; Columbia University College of Physicians and Surgeons, New York; 1902; professor of radiology at the New York University College of Medicine; professor of roentgenology at the New York Post-Graduate Medical School from 1914 to 1917; served during World War I; member and formerly vice president of the Radiological Society of North America, Inc.; fellow of the American College of Physicians; director of the x-ray departments of the Bellevue and Allied Hospitals from 1910 to 1926; for many years director of the x-ray department of the Beth Israel Hospital; x-ray consultant to the New York State Compensation Commission; author of "Principles and Practice of Roentgenological Technique" published in 1920 and "Principles and Practices of Roentgen Therapy" published in 1925; aged 61; died, March 24, in the Mount Sinai Hospital of cardiovascular disease.

Rome Haward Walker ✠ Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1914; member of the House of Delegates of the American Medical Association in 1932; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; past president of the West Virginia State Medical Association and the Kanawha Medical Society; served during World War I; in 1921 was appointed medical examiner to the Workmen's Compensation Department and served in that capacity until 1929; chairman of the state committee on medical preparedness and medical chairman of the Procurement and Assignment Service of West Virginia; aged 53; on the staff of the Mountain State Hospital, where he died, February 19, of sarcoma.

Louis Gustavus Nolte, Milwaukee; College of Physicians and Surgeons, medical department of Columbia College, New York, 1886; member of the State Medical Society of Wisconsin; past president of the Medical Society of Milwaukee County; fellow of the American College of Surgeons; professor of surgery at the Milwaukee Medical College, 1911-1912; police surgeon from 1890 to 1896; surgeon, Evangelical Deaconess, Trinity, Misericordia and Johnston Emergency hospitals; consulting surgeon, Milwaukee County Hospital, Wauwatosa; aged 79; died, February 15, of coronary occlusion.

Henry Flanagan Pipes ✠ Colonel, M. C., U. S. Army, Washington, D. C.; Columbian University Medical Department, Washington, 1902; entered the army in July 1903 and rose through the various grades to that of colonel in July 1929; fellow of the American College of Surgeons; at one time instructor in operative surgery and x-ray work in the Army Medical School; at one time in the office of the Surgeon General; on the staff of the U. S. Soldiers' Home Hospital; aged 63; died, February 19, at the Walter Reed General Hospital of coronary thrombosis.

William Joseph Ryan ✠ Pomona, N. Y.; Albany Medical College, 1915; fellow of the American College of Physicians; secretary and past president of the Rockland County Medical Society; served during World War I; consultant in diseases of the chest, Nyack (N. Y.) Hospital, Good Samaritan Hospital, Suffern, Rockland State Hospital, Orangeburg, Tuxedo Memorial Hospital, Tuxedo Park and the Letchworth Village, Thiells; superintendent and medical director of the Summit Park Sanatorium, where he died, February 20, of coronary thrombosis, aged 52.

Ross A. Woolsey ✠ St. Louis; St. Louis University School of Medicine, 1904; member of the House of Delegates of the American Medical Association in 1923; past president of the Missouri State Medical Association; member of the Western Surgical Association, Southern Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; medical director and superintendent of the Frisco Employees' Hospital; aged 64; was killed, February 23, in an automobile accident.

Albert Keidel, Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1903; at various times assistant, instructor, associate, associate professor and associate professor emeritus of medicine at his alma mater; member of the American Clinical and Climatological Association; served in various capacities on the staff of the Johns Hopkins Hospital; aged 64; died, February 8, in the Sheppard and Enoch Pratt Hospital, Towson, Md., of meningitis following a skull fracture.

Joseph Harold St. John ✠ Lieutenant Colonel, M. C., U. S. Army, retired, Washington, D. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1915; entered the medical corps of the U. S. Army as a first lieutenant in 1918; rose through the various grades to that of lieutenant colonel in 1937; retired, Oct. 31, 1940; for many years instructor of parasitology at the Army Medical School, and from 1928 to 1930 a member of the Medical Department Research Board of the United States Army; aged 50; died, February 17, of coronary occlusion.

Alphonse Francis Pirnique, Little Rock, Ark.; Columbia University College of Physicians and Surgeons, New York, 1927; member of the Arkansas Medical Society; assistant professor of pathology at the University of Arkansas School of Medicine; served as a lieutenant with the Chemical Warfare Division of the French army during World War I; on the staff of the Baptist State, St. Vincent's, University and Arkansas Children's Home hospitals; aged 49; died, February 2, of carcinoma of the pancreas.

Frank Dyckman Scudder ✠ Montclair, N. J.; Columbia University College of Physicians and Surgeons, New York, 1914; fellow of the American College of Surgeons; served during World War I; attending surgeon, Mountainside Hospital, Montclair, Essex County Hospital for Contagious Diseases, Belleville, and consulting surgeon, Newton Memorial Hospital, Newton; aged 54; died, February 7, of coronary thrombosis.

James Aloysius Walsh ✠ Pittsburgh; Jefferson Medical College of Philadelphia, 1925; assistant demonstrator of pathology at his alma mater, 1926-1927; fellow of the American College of Surgeons; served during World War I; on the courtesy staff of the Woman's Hospital; on the staffs of St. Joseph's Hospital and the Roselia Maternity Hospital; aged 43; died, February 22, of coronary occlusion.

Herbert Ralph Stockwell ✠ Ann Arbor, Mich.; Ohio State University College of Medicine, Columbus, 1928; member of the Ohio State Medical Association; instructor of orthopedic surgery at the University of Michigan Medical School, 1941-1942; formerly on the staff of the Miami Valley Hospital, Dayton; aged 40; died, February 25, in the University Hospital of coronary thrombosis.

Wallace Fahnestock Grosvenor ✠ Chicago; Chicago Homeopathic Medical College, 1895; Rush Medical College, Chicago, 1900; fellow of the American College of Surgeons; formerly associate in obstetrics and gynecology at the Rush Medical College; attending obstetrician and gynecologist, St. Joseph Hospital and the Ravenswood Hospital; aged 72; died, March 3.

Jack Gossett Hutton ✠ Denver; Western Reserve University School of Medicine, Cleveland, 1921; assistant professor of dermatology and syphilology at the University of Colorado School of Medicine; member of the American Academy of Dermatology and Syphilology; aged 47; died, February 28, in St. Louis following an operation for bronchoesophageal fistula.

Dan Hiter Witt ✠ New York; University of Virginia Department of Medicine, Charlottesville, 1914; instructor of medicine at the Cornell University Medical College; served during World War I; aged 51; on the staffs of the Manhattan Eye, Ear and Throat Hospital and the New York Hospital, where he died, February 15, of subdural hematoma.

Harry Osro Taylor, Anna, Ill.; National University of Arts and Sciences Medical Department, St. Louis, 1918; member of the Illinois State Medical Society; in 1941 president of the Union County Medical Society; county coroner; aged 61; died, February 13, in the Holden Hospital, Carbondale, of cirrhosis of the liver.

Arthur Paul Wakefield, Belmont, Mass.; Rush Medical College, Chicago, 1904; for twenty-two years medical missionary in China; supervisor of clinics for crippled children for the state department of health; formerly superintendent of the Central Maine Sanatorium, Fairfield; aged 63; died, February 6, of cerebral hemorrhage.

Hugh Willis Williams ✠ Pontiac, Mich.; Detroit College of Medicine and Surgery, 1932; medical superintendent of the Oakland County Infirmary; formerly assistant superintendent of the Oakland County Tuberculosis Sanatorium; aged 37; died, February 12, in the Pontiac General Hospital of self-inflicted bullet wounds.

Barnard John Rothberg, Hayward, Wis.; Universität Basel Medizinische Fakultät, Switzerland, 1937; field physician for the Great Lakes Indian Agency on the Lac Courte Oreilles Reservation; aged 34; died, February 19, in the Hayward Indian Hospital of injuries received in an automobile accident.

Robert Almon Brehm, St. John's, Newfoundland; Dalhousie University Faculty of Medicine, Halifax, N. S., 1898; L.R.C.P., London, and M.R.C.S., England, 1900; served during World War I; for many years medical officer of health of St. John's; aged 71; died, February 7, of endocarditis.

Richard Clyde Sebern, Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1904; member of the Iowa State Medical Society; aged 60; on the staffs of St. Joseph Mercy Hospital and the Lutheran Hospital, where he died, February 18, of coronary thrombosis.

James Henry Williams, McKenzie, Tenn.; Memphis Hospital Medical College, 1912; member of the Tennessee State Medical Association; chairman of the board of education; aged 59; died, February 1, in the Baptist Memorial Hospital, Memphis, of carcinoma of the adrenal glands.

Roland A. Willett ✠ Elmore, Ohio; Bellevue Hospital Medical College, New York, 1888; president of the county board of health; for many years member and president of the board of education of Elmore; at one time mayor; aged 75; died in February of a malignant tumor of the rectum.

Will Turpin Dowdall, Paducah, Ky.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; served during World War I; aged 69; on the staff of the Illinois Central Hospital, where he died, February 27, of arteriosclerotic heart disease.

Richard R. Worthington, Indianola, Ill.; Medical College of Ohio, Cincinnati, 1874; member of the Illinois State Medical Society; also a druggist; aged 90; died, February 23, in the Lake View Hospital, Danville, of tracheobronchitis and prostatic hypertrophy.

Elam Eugene Lashbrook ✠ Estherville, Iowa; State University of Iowa College of Medicine, Iowa City, 1906; formerly secretary of the Emmet County Medical Society; on the staff of the Coleman Hospital; aged 60; died, February 26, of cerebral anemia.

Reuben Pennington ✠ Minneapolis; University of Minnesota Medical School, Minneapolis, 1930; also a dentist; aged 48; on the staff of the Swedish Hospital, where he died, February 25, of coronary thrombosis due to coronary arteriosclerosis.

Harry Philson Mason, Wilton Junction, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; for many years a member of the county board of education; aged 67; died, February 8, of heart disease.

Blair Cantrell Hale ✠ Chattanooga, Tenn.; Chattanooga Medical College, 1909; member of the Medical Association of Georgia; past president of the Walker County (Ga.) Medical Society; aged 55; died, February 25, of coronary thrombosis.

Frank Oscar Ringnell, Gilman Hot Springs, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1895; served during World War I; aged 75; died, February 23, in San Jacinto of bronchial asthma.

George Whitfield Knipe, Vancouver, B. C., Canada; National University of Ireland, 1906; L.R.C.P., L.R.C.S., Edinburgh, and L.F.P.S., Glasgow, Scotland, 1906; aged 66; died, February 6, of coronary thrombosis.

Philip Ulmer Reeves, Birmingham, Ala.; University of Georgia Medical Department, Augusta, 1901; member of the Medical Association of the State of Alabama; aged 68; died, February 11, of coronary thrombosis.

Henry Austin Wood ✠ Waltham, Mass.; Harvard Medical School, Boston, 1883; fellow of the American College of Surgeons; on the staff of the Waltham Hospital; aged 86; died, February 22, of bronchopneumonia.

Longworth Shuttleworth Anderson, Irvington, Calif.; Cooper Medical College, San Francisco, 1898; aged 63; died, January 13, of hypostatic pneumonia, hypertension, arteriosclerosis and chronic nephritis.

Charles Sylvester O'Toole, Anaheim, Calif.; Barnes Medical College, St. Louis, 1901; for twenty years physician for St. Catherine Military Academy; aged 72; died, February 5, of heart disease.

Obadiah Fremont Higbee, Fowler, Colo.; State University of Iowa College of Medicine, Iowa City, 1890; member of the Colorado State Medical Society; aged 81; died, February 21, of chronic bronchiectasis.

Sergey Nikolaevich Chernyh, San Francisco; University of Tomsk Faculty of Medicine, Russia, 1895; aged 71; died, January 16, in the University of California Hospital of carcinoma of the pancreas.

Mark D. Hill, Topeka, Kan.; Kansas City (Mo.) Hahnemann Medical College, 1910; member of the Kansas Medical Society; aged 56; died, February 24, of coronary occlusion and diabetes mellitus.

James Emri Pierce, Bogalusa, La.; Memphis (Tenn.) Hospital Medical College, 1902; aged 74; died, February 21, in the Elizabeth Sullivan Memorial Hospital of intestinal obstruction.

James Emmet Robins, Buffalo, Ohio; Starling Medical College, Columbus, 1895; formerly county coroner; aged 71; died, February 14, in St. Francis Hospital, Cambridge, of carcinoma.

John Franklin Sutton, Bellaire, Ohio; University of Cincinnati College of Medicine, 1920; member of the Ohio State Medical Association; aged 58; died, February 9, of coronary occlusion.

Asa Earnest Dillman, Steuben, Wis.; Medical University of Ohio, Cincinnati, 1890; member of the State Medical Society of Wisconsin; aged 83; died, February 26, of cardiovascular disease.

Ernest E. Miller, David City, Neb.; John A. Creighton Medical College, Omaha, 1900; member of the Nebraska State Medical Association; aged 72; died, February 24, of coronary disease.

Thomas Junior Nunnery, Granite, Okla.; University of Nashville (Tenn.) Medical Department, 1908; aged 55; died, February 20, at Oklahoma City of acute dilatation of the heart.

John W. Obrist ✠ Portsmouth, Ohio; Medical College of Ohio, Cincinnati, 1889; on the staff of the Portsmouth General Hospital; aged 78; died, February 26, of hypostatic pneumonia.

Francis W. Pease, Keokuk, Iowa; Homeopathic Medical College of Missouri, St. Louis, 1883; aged 83; died, February 9, in the Graham Protestant Hospital of hypostatic pneumonia.

Joseph Morgan Maurer, Washington, Pa.; Hahnemann Medical College of Philadelphia, 1875; aged 93; died, February 28, in the Allentown (Pa.) State Hospital of arteriosclerosis.

Thomas H. Wright, Charlotte, N. C.; University of Virginia Department of Medicine, Charlottesville, 1902; aged 61; died, February 26, of myocarditis and cerebral hemorrhage.

Charles A. Wilson, Du Bois, Pa.; Kentucky School of Medicine, Louisville, 1881; aged 84; died, February 7, in the Maple Avenue Hospital of injuries received in a fall.

Herman Anthony Glatzmayer, San Antonio, Texas; Long Island College Hospital, Brooklyn, 1895; aged 79; died, January 31, of arteriosclerosis and heart disease.

Thomas Tito, Staten Island, N. Y.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1903; aged 72; died, February 26, of cardiac decompensation.

Charles A. Lyman, Encinitas, Calif.; Lincoln (Neb.) Medical College of Cotner University, 1906; aged 69; died, January 16, in Oceanside of carcinoma of the larynx.

John Wheeler Clark, Carterville, Mo.; Barnes Medical College, St. Louis, 1895; aged 68; died, February 22, of acute follicular tonsillitis and chronic myocarditis.

Cornelius Hood Williams, Middletown, Ohio; Kentucky School of Medicine, Louisville, 1889; aged 82; died, January 30, of cerebral hemorrhage.

John E. Bayliff, Uniopolis, Ohio; Pulte Medical College, Cincinnati, 1887; aged 80; died, February 28, of arteriosclerosis and heart disease.

DIED IN MILITARY SERVICE

Collum Anthony Miles, Wilmerding, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1937; member of the Medical Society of the State of Pennsylvania; was called to active duty as a first lieutenant in the medical reserve corps of the U. S. Army, March 3, 1941; aged 30; was shot and killed while aboard ship in Hawaii, March 12, when a sentry accidentally discharged his gun.

Frederick Page Boswell ✠ Montgomery, Ala.; University of Alabama School of Medicine, 1913; member of the Radiological Society of North America, Inc., and the American College of Radiology; lieutenant in the medical corps of the Alabama National Guard from 1913 to 1915; served in the U. S. Navy during World War I; reported to active duty on Dec. 29, 1941, with the rank of lieutenant commander, medical corps, voluntary specialist, U. S. Naval Reserve; roentgenologist to St. Margaret's Hospital; aged 53; died, March 10, in the U. S. Naval Hospital, Corpus Christi, Texas.

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are brief abstracts of some fraud orders not dealt with previously:

Frederick P. Walker Company.—This was the trade style used by Frederick P. Walker of Yonkers, N. Y., in selling his "Sanocrin" or "Sanocrin Pomade" as an alleged cure for dandruff, eczema or itching of the scalp and falling hair, and also as a "hair grower" and "hair color restorer." Originally Walker had operated under the names Sanocrin Products Company and Sanocrin Hair Products Company, and when the Post Office Department first indicated that it would commence action against him for operating a mail order fraud he signed an affidavit on April 25, 1940 in which he promised the Department that he would abandon the scheme. Instead, it developed that he continued in business but adopted the new name, Frederick P. Walker Company. When the Post Office again notified him to show cause on March 20, 1941 why a fraud order should not finally be issued against him, he replied that he was no longer in business because of his inability to obtain his preparation from Sweden and had been returning his customers' remittances. He asked permission to file a new affidavit, this one to authorize the postmaster at Yonkers to return to the senders all mail addressed to him and stamp it "Out of Business." Because his previous affidavit had proved false his request was refused. When his case came to the hearing Walker neither appeared nor sent a representative. Testimony for the government was, however, presented by the Post Office inspectors who had investigated the business under its two names and also by an expert medical witness and a government chemist. The chemist testified that his analysis of the product revealed that it consisted of 51 per cent of unsaponifiable material such as mineral oil and wax, 40 per cent of fats, 1.8 per cent by weight of volatile oils and 0.14 per cent of sulfur. The expert medical witness testified that such a mixture would have a mild irritant and antiseptic action when applied, but that aside from a temporary effect in cases of dandruff and itching scalp the product would have no therapeutic value and would not cause hair to grow on the heads of bald persons as represented, nor would it restore gray hair to its original color. In fact, it was pointed out that Frederick P. Walker, when interviewed by one of the Post Office inspectors in September 1939, was himself observed to be a person whose hair consisted of a few strands which were combed straight back over the head. His explanation was that he had used his preparation at one time but had received no benefit because he had not continued using it. All things considered, his business was declared by the Post Office to be a scheme for obtaining money unlawfully and on April 14, 1941 a fraud order was issued against the Frederick P. Walker Company and its officers and agents.

Gold Band Eye Balm Company.—This concern did business from Jacksonville, Fla., selling through the mails its "Gold Band Eye Balm" by representations which the Post Office declared to be false and fraudulent. Among these were that when used as directed the preparation would enable the blind to see, would restore to normal the eyesight of persons suffering from sight deficiencies and enable persons wearing eye glasses for eyesight defects to discard the further use of such glasses in "from 4 to 8 weeks"; that it would accomplish these results regardless of whatever treatments had previously been employed and would produce for any user the same or similar results as were described in testimonials played up in the advertisements. The Post Office investigation revealed that the concern had been incorporated for $15,000 in June 1932 and that the stock was owned by an A. I. G. Richardson of Monticello, Fla., and an Edward J. W. Day of Jacksonville, Fla. Day was found to be the manager and sole operator of the enterprise. To inquirers he sent a small pamphlet entitled "The World's Greatest Relief for Eye Trouble, Gold Band Eye Balm." On the front cover of this were these claims: "Clears and Strengthens eyes from 5 to 8 months. You may lay aside your glasses from 4 to 8 weeks by following directions." Inside it was stated "People who were nearly blind, have had their sight brought back by Gold Band Eye Balm," and alleged testimonials given therein contained such statements as "It made the blind to see" and "many prescriptions from the best oculists proved inefficient to bring relief, but the eye balm prescribed by the G. B. E. B. Co. has done more to remove the inflammation and give a clear vision than any I have used." According to the Post Office inspector who investigated this case, Mr. Day informed him that he began to market this product as a result of a vision which came to him in his sleep from God and that the "balm" was made from a root. Government chemists reported that the preparation consisted of water with the usual amount of minerals ordinarily found in drinking water. At the hearing of the case an expert medical witness for the government testified that eyesight defects are due to many causes, including anatomical changes in the eyeball, and that certain diseases have a deleterious effect on the sight. He further pointed out that cataracts frequently are present in deficiencies of sight; that many other factors enter into the impairment of vision; that in ordinary cases the wearing of properly fitted eye glasses usually affords proper vision to the wearers and that certain kinds of eye troubles are incurable by any known medicinal treatment including the one in question. It was further brought out that cataracts require the intervention of surgery. The evidence showed also that Day's nostrum would have no more effect than the use of ordinary drinking water in the eye and that it certainly would not enable persons who wear glasses to discard them in "from 4 to 8 weeks" as claimed or prove effective in the restoration of eyesight deficiencies when all other treatments and measures failed. Mr. Day put up no defense in this case and sent no one to represent him, although previously his attorney had filed a general denial of the charges with the Post Office Department. On Jan. 7, 1941 a fraud order was issued against the Gold Band Eye Balm Company and its officers and agents.

Schmedding Laboratories.—This Los Angeles concern, run by a Joseph Schmedding and an M. E. Anderson, sold by mail "Schmedding's Home Treatment," "Schmedding's Mouth Wash" and "Schmedding's Tooth Powder," making representations that the Post Office Department declared to be false and fraudulent. Among these were that the products were a "truly amazing discovery" which would prevent and overcome pyorrhea, trench mouth and similar conditions and that person using them at home would obtain the same beneficial results in these disorders as are offered by dentists in their offices. To those who answered the advertisements the concern sent the three products mentioned. The "Home Treatment," government chemists reported, was a light brown liquid which contained 0.5 Gm. of phenol per hundred cubic centimeters, the remainder being essentially glycerin and water with a small amount of tannic acid. It was to be swabbed on the affected areas with cotton several times daily. The "Concentrated Mouth Wash," the government chemists testified, was an olive-green liquid containing 0.122 Gm. of iodine per hundred cubic centimeters, 26.7 Gm. of nonvolatile matter, chiefly glycerin, 0.2 per cent of volatile oils (wintergreen and peppermint), water and a small amount of tannic acid. This mixture was to be used as a gargle or mouth wash after each meal and at bedtime. The tooth powder, according to the government chemist, contained 46 per cent of common salt with 26 per cent of calcium carbonate, 13 per cent each of sodium perborate and soap and unnamed amounts of saccharin, methyl salicylate and oil of peppermint. At the hearing of this case an expert medical witness for the government testified regarding the causes and scientific treatment of pyorrhea and showed that the Schmedding products would have practically no remedial effect on this condition. The defendants sent no representative to the hearing. On March 7, 1941 a fraud order was issued against the Schmedding Laboratories, Joseph Schmedding, M. E. Anderson and their officers and agents.

Vita-Lux Company, Technical Equipment Company, Nu-Vita Company and D. F. Starkweather.—Under these names one Irving Schumaker and a person named Nelson sold through the mails a device called the "Nu-Vita" (also known as the "Vita-Lux") for prostatic disorders and some other conditons. It was represented that the Nu-Vita device was a "perfect" method for massaging the prostate gland and achieved "complete emptying" thereof in a manner superior to and more effective than digital massage technic employed by physicians; that it would remove the cause of and permanently cure hemorrhoids and "pelvic disorders" including those affecting the rectum, bladder, uterus, ovaries, tubes and other organs of the "pelvic cavity"; that it would overcome constipation and soon establish regular and normal bowel action and could be used with absolute safety by persons afflicted with any of the disorders named. The device, which sold for $15, was represented by the Post Office to consist simply of a hard round rubber rod or dilator 5½ inches long for insertion in the rectum or pelvic cavity. The dilator was provided with an electric cord to be plugged into the house current, together with a switch for turning the electricity on and off. In September 1940 the Post Office Department notified Schumaker and Nelson to show cause on October 21 why a fraud order should not be issued against them and the trade style they were using, but they neither put in an appearance at the hearing nor sent any representative. For the government there appeared an expert medical witness who testified that scientific experiments made on the device disclosed that after fifteen minutes of heating the Nu-Vita attained a temperature of 109 degrees Fahrenheit, much too hot to be tolerated by the tissues being treated, and further that there was no way to regulate the temperature of this mechanism except by turning off the electric current completely. He further testified that some prostatic disorders are based on causes which a device of this kind could not possibly affect nor would it be a safe means of self treatment, particularly since certain serious conditions such as cancer frequently accompany prostatic disorders. It is worth noting that the defendants had published a testimonial alleged to come from a purported physician whom the Post Office was unable to identify as a Doctor of Medicine. Also, there apparently was no such person as D. F. Starkweather, who was represented as president of the Nu-Vita Company. On Nov. 25, 1940 the Post Office Department issued a fraud order against the names Vita-Lux Company, Technical Equipment Company, Nu-Vita Company, D. F. Starkweather, president, and their officers and agents.

"You and I" Trading Shop, Dunbar Company, Ltd., The Heather Journal, The Scotch Heather Journal, The Scotch Heather Herb Company and Indian Mailing Service.—These were names used by a John Dunbar and a Mrs. Mary W. Titus of Bradford, Pa., in selling "Grey Eagle Pile Ointment" through the mails as a remedy for various rectal disorders including even tumors, cancers and ulcers. Neither of the defendants appeared at the hearing which the Post Office Department held on Nov. 13, 1940. At that time a government chemist testified that the nostrum consisted of echinacea, wild alum and indigo in a petrolatum base. An expert medical witness testified for the government that these ingredients are ordinary drugs whose actions and limitations are well known to the medical profession, and that although the mixture in question might offer some slight temporary relief in painful symptoms, it would have no other effect on the conditions named. Further it was brought out that on the previous May 6 Mrs. Titus had signed an affidavit with the Post Office agreeing to discontinue the sale of Grey Eagle Pile Ointment and some other nostrums but had not kept her promise. Accordingly on Nov. 26, 1940 a fraud order was issued against all the company names in question.

Correspondence

THE DOCTOR'S PART IN BUILDING MORALE SEEN AS STEP TO TOTAL VICTORY

To the Editor:—In THE JOURNAL, February 21, page 624, an editorial on national morale contains the statement "A nation with good morale is one with enthusiasm, confidence, teamwork and endurance. Many people like to think that morale is just common sense. However, the building of morale involves psychologic principles and studies of public opinion far beyond anything we have yet attempted in this country. The process of morale building is closely allied to the processes of education. That morale is best built which is built from thousands of small centers in a nation rather than that based on the prestige and power of a few national figures. The chief danger points in the home front are obviously the bickering and arguments which tend to split a nation into small groups, many organized specifically to question national decisions."

The American doctor, with his insight into human nature and enjoying the confidence and trust of the average American, has a unique opportunity in thousands of centers throughout the nation to create sound national morale. A star columnist of the national press in blitzed Britain has said that "morale is the secret weapon that will win the war." Particularly in time of war the creation of sound national morale is essential for sound health and for the success of the national effort. On morale depends the efficiency, enthusiasm and staying power of the soldiers on the production lines. And we are well aware of the psychologic effect that a high civilian morale has on the soldiers on the firing lines.

In this situation every doctor has the opportunity to be a statesman. A statesman is a citizen who sees the effect of bickering and division in home and community on national welfare and prescribes the answer. Every day we are entering homes where disputes and bickerings, "the main point of danger in the home front," characterize the life of the family and undermine the spirit which is fundamental to the health and morale of a nation at war. Friction in homes produces leaky valves in the fighting heart of the nation. It creates waste of energy, money, time, emotion and brainpower.

In a time of total war it becomes necessary to write a corollary to the Hippocratic Oath that not only will we "do no evil on entering a home" but we will leave the cure for the evil of division and bitterness we may find there. As we create homes which have learned how to meet division and to pull together, the family will carry this spirit into the life of the community and build the foundation necessary for sound health and hysteria proof, greed proof morale.

Every doctor can work out his own method for achieving morale in the homes he reaches. But there are two simple principles which can be left on a prescription pad to be filled by the family. They always work:

1. The power of honest apology, which is a specific for division and bitterness and is the road to honest peace.
2. The settlement of differences in the life of the family and community on the basis of what's right, not who's right.

This is not only good therapy as a background to treatment of the patient's ills but in war time is an essential national service in creating a united, purposeful, confident and enthusiastic people. It will save human energy for peak production. True loyalty to medicine takes us beyond our personal relationship to it. It takes our thought and energy and devotion to the profession as a whole and to its destiny in this country.

Already in many areas of American life the prescription of honest apology has reduced individual tensions, created industrial cooperation, helped unite the nation and so sustain general morale.

Failure of the medical profession to render this service to the nation makes easier the carrying out of the enemy's announced strategy for this continent: to divide and conquer.

As we accept responsibility for the morale of the nation we become statesman-doctors, sources of unity and strength for the nation producing the physical, mental and moral fitness necessary for an all out effort.

By now it is obvious that, if medicine is to have the air of freedom in which alone it can thrive and maintain its advances, we must create now in this nation the superforce of an unconquerable spirit which will not only win the war but secure the peace and build a new world.

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FALLING DROP TECHNICS

To the Editor:—In THE JOURNAL, January 17, page 248, there appears a communication from H. G. Barbour and S. F. Hamilton criticizing falling drop technic other than the one which they developed.

My calculations and procedure (*J. Clin. Investigation* **17:** 369, 373 [July] 1938; *J. Lab. & Clin. Med.* **26:**1681 [July] 1941) were based on Stokes's law for the fall of a sphere through a viscous medium, which was proved in 1851; though no author until I myself applied Stokes's great contribution, many contributed to the evolution of this determination.

The application of Stokes's law eliminated Barbour and Hamilton's "vagaries" of oils "under different conditions of temperature." It also greatly simplified the calculations and eliminated the complex logarithmic expression and the admittedly unsatisfactory nomogram required in their technic. Barbour and Hamilton themselves point out (*J. Biol. Chem.* **69:** 639 [Aug.] 1926) that expansion and contraction of the paper due to atmospheric changes are "a real drawback" to the accurate use of nomograms.

After correspondence with the Eastman Kodak Company, Barbour and Hamilton decided on a xylene-bromobenzene medium. Later Guthrie and Kruse found that methyl salicylate and liquid petrolatum could be used. Since the latter has a much higher boiling point and evaporation is minimal, the necessity for the constant use of standards is eliminated. Such a mixture prepared four years ago and tested repeatedly has shown no detectable change. Furthermore it is obvious that this oily preparation will maintain its physical properties much longer than the aqueous solutions of potassium sulfate used by Barbour and Hamilton for standards, no matter how well these aqueous solutions are protected by layers of oil.

These critics offer no proof for their statement that decrease in the length of fall of the drop significantly affects sensitivity. On the other hand, Hochberg and La Mer recently increased the sensitivity of Barbour and Hamilton's method by various changes, one of which was shortening the length of fall.

For reasons stated clearly by Moore and Van Slyke (*J. Clin. Investigation* **8:**341 [April] 1930), few people used the method of Barbour and Hamilton from 1924, when it was first described, until the last several years. Moore and Van Slyke found that in this method the precautions required for maintaining standards and reading the nomogram made the chances of error greater than in the older pyknometric method.

Barbour and Hamilton claim that they first pointed out the chief clinical applications of the falling drop principle. Today one of its most widespread and useful clinical applications is for the estimation of serum protein concentration. They do not describe the usefulness of their method for this purpose in any of their writings. In 1930, three years after their last publication on this subject, the linear relationship which exists between specific gravity and plasma protein concentration was

first demonstrated by Moore and Van Slyke, who used the older pyknometric method for reasons already stated.

In June 1937 I submitted for publication the first report of a falling drop technic for the determination of serum protein concentration which is rapid, accurate and simple enough for routine clinical purposes. The method I described has been proved by satisfactory performance in laboratories all over the country, and the results have been verified in detail by Shuman and Jeghers (*New England J. Med.* **222**:335 [Feb. 29] 1940).

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ADVANTAGES OF BENZOYL PEROXIDE OVER ZINC PEROXIDE OR SULFONAMIDES IN TREATING WOUNDS OR BURNS

To the Editors:—Editorial comment recently appeared (THE JOURNAL, March 21, p. 981) on zinc peroxide and sulfonamide derivatives in the treatment of gas gangrene. This called attention to the work of F. L. Meleney (*Ann. Surg.* **101**:997 [April] 1935; **109**:881 [June] 1939; *U. S. Nav. M. Bull.* **40**:53 [Jan.] 1942) in showing the effectiveness of a 40 per cent watery suspension of zinc peroxide in preventing gas gangrene when applied to wounds infected with gas producing organisms. This has been confirmed by G. B. Reed and J. H. Orr (*War Med.* **2**:79 [Jan.] 1942) and has been extended by them to include the use of sulfathiazole. They state that sulfathiazole is superior to other sulfonamide derivatives for this purpose. The latter opinion is at variance with the experience of surgeons at Pearl Harbor, who feel that there is less foreign body reaction in the wound when dusted with sulfanilamide than when sulfathiazole is used.

With regard to the recommendation for the use of zinc peroxide, it may be recalled that long ago A. S. Loevenhart (*Therap. Monatsh.* **12**:426, 1905) suggested benzoyl peroxide as an effective nonirritating oxidizing antiseptic. R. A. Lyon and T. E. Reynolds (*Proc. Soc. Exper. Biol. & Med.* **27**:122 [Nov.] 1929) demonstrated the relative effectiveness of benzoyl peroxide over other agents in promoting wound healing.

There is evidence that the sulfonamides inhibit wound healing and irritate tissue (Taylor, F. W.: The Misuse of Sulfonamide Compounds, THE JOURNAL, March 21, p. 959). This is to be expected if the mechanism of action of these chemotherapeutic agents is to inhibit growth. This inhibition may occur by interfering with such growth promoting substances as para-aminobenzoic acid, as proposed by D. D. Woods (*Brit. J. Exper. Path.* **21**:74 [April] 1940) and abundantly confirmed (McIlwain, H., *ibid* **22**:148 [June] 1941. Harris, J. S., and Kolm, H. I.: *J. Pharmacol. & Exper. Therap.* **73**:343 [Dec.] 1941. Rantz, L. A.: *Proc. Soc. Exper. Biol. & Med.* **49**:137 [Feb.] 1942). Sulfonamides, on the other hand, may block at certain concentrations enzyme systems necessary for growth, as proposed by F. H. Johnson (*Science* **95**:104 [Jan. 23] 1942). In either case, clinical experience seems to substantiate the expectation that sulfonamides delay wound healing. However, many clinicians who cannot resist the notion that the sulfonamide drugs are miracle mongers tend to protest, sometimes with undue emphasis, that they have found no evidence that the sulfonamides actually do interfere with wound healing. Of course, anything that reduces infection in a wound will help the wound to heal. But the sulfonamides in a sterile wound may reduce the rate of healing.

Benzoyl peroxide has advantages over the sulfonamides for direct dusting into wounds to inhibit gas forming organisms in that there is evidence to show that it promotes wound healing, in addition to exerting an effective antiseptic action without local irritation or injury. It has an advantage over zinc peroxide in that it is locally anesthetic. Benzoyl peroxide may be dusted directly into the wounds or be applied in a water suspension in any appropriate concentration or in petrolatum at a concentration of 10 per cent. In a concentration of 5 to 10 per cent it might be incorporated in liquid petrolatum or molten paraffin wax (as proposed by Dr. Ralph Pendleton) for spraying on burned areas. The advantages of benzoyl peroxide for local application to wounds, abrasions or burns are (1) effective, long lasting, oxidizing antisepsis, particularly against gas producing organisms, (2) lack of local injurious or irritating effects, (3) lack of penetration into tissue with no protein precipitation and thus with no tendency to interfere with healing, (4) tendency as shown by direct experimentation to promote healing and (5) local anesthetic action to relieve pain, local irritation, itching and other local discomfort.

These properties of benzoyl peroxide suggest its effectiveness for use in handling war gas injuries, with particular reference to lesions of the skin or mucous membranes developing from mustard gas or lewisite.

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PRESERVATION OF LIQUID PLASMA BY SULFONAMIDE DERIVATIVES

To the Editor:—In the February 14 issue of THE JOURNAL I published a paper on the preservation of liquid plasma by the use of sulfonamide derivatives. The report was based on hundreds of experiments employing numerous species of bacteria encountered as contaminants in stored plasma. In no instance did I demonstrate growth of bacteria in plasma containing 200 mg. per hundred cubic centimeters (0.2 per cent) of sodium sulfathiazole, nor did plasma containing the compound become grossly contaminated when exposed to air contamination for long periods of time.

In THE JOURNAL of March 28, Heath and Province published their results on a small series of experiments carried out under unusual conditions in that they do not represent actual working conditions and made broad conclusions which do not discredit my own but tend to cast doubt on the efficacy of the sulfonamide method. In their experiments they used only five species of bacteria, none of which are commonly found in contaminated plasma. They completely ignored the common contaminants such as the aerobic spore formers.

The experimental temperature of storage was 5 C. and 37 C. At the former temperature no growth was obtained in any tubes including the controls because of the improper choice of bacteria. No explanation is made as to why 37 C. was chosen as an experimental temperature, since plasma is obviously not stored in an incubator. However, in spite of these conditions their results show complete bacteriostasis with some of the drugs used in a 0.2 per cent concentration, together with a bactericidal action which confirms my results in part.

Since their conclusions are based on these limited observations, under conditions not applicable from a practical standpoint and in spite of evidence to the contrary in their own data, I feel that their statements which tend to cast doubt on the value of the compounds as bacteriostatic agents in plasma are not justified.

I have concluded on the basis of much more extensive laboratory investigations and observations on actual routine clinical use in outstanding hospitals that the sulfonamide derivatives as preservatives in plasma are the answer to the vexing problem of bacterial contamination.

MILAN NOVAK, M.D., Chicago.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, April 25, page 1315.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various centers, June 22-24. *Part III.* Various centers, June or July. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral. Part II.* Atlantic City, June 6-7. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral. Groups A and B.* Cleveland, Jan. 14-15, 1943. Final date for filing application is Dec. 7. *Written.* Various centers, Nov. 16. Final date for filing application is Oct. 5. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: June, Philadelphia, in advance of the meeting of the American Medical Association. Application should be on file 6 weeks in advance of the date of oral examination. *Written.* Oct. 19. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New York, May 12-13. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville, Ky.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Baltimore, June 6, and Philadelphia, June 8. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written.* Chicago, Jan. 9-10. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Richmond, Nov. 9-10. Final date for filing application is Sept. 1. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 18. *Oral.* Chicago, Nov. 2-3. Final date for filing application is July 1. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, December. Final date for filing application is Oct. 1. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF UROLOGY: If a sufficient number of applications are received an examination will be held in the east at the same time or shortly after one of the national meetings. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Paternity: Compulsory Blood Grouping Tests Violative of Right of Privacy.—The plaintiff filed a bill for divorce against his wife on the ground of adultery, alleging that he was not the father of a child then recently born to her. A New Jersey law provides, among other things, that whenever it shall be relevant in a civil action to determine the parentage of any child the courts may direct that any party to the action and the person whose parentage or identity is involved submit to one or more blood grouping tests. The plaintiff sought to invoke the provisions of this law and asked the court to order that blood grouping tests be made of him, his wife and the child in order to determine the child's parentage. The wife contested the application, contending, on behalf of herself and for the child, that an order for the making of blood grouping tests would constitute an invasion of "their natural and constitutional privileges."

Whether a compulsory order for the taking of blood grouping tests is in violation of the privilege against self incrimination, pointed out the court of chancery of New Jersey, has been debated without any unanimity of opinion. The subject has been discussed in law review articles on the basis of analogic reasoning, but not one of these articles has referred to any controlling decisions. The court then discussed in detail cases from other jurisdictions in which this issue has been involved, including the case of *State* v. *Height,* 117 Iowa 650, 91 N. W. 935, 59 L. R. A. 437, 94 Am. St. Rep. 323. In that case, characterized by the court as "the leading case," the defendant was accused of statutory rape of a child aged 10 years. In order to prove his guilt the state offered in evidence the testimony of a physician who had made a physical examination of the accused against his will to determine whether he was afflicted with a venereal disease similar to that with which the prosecutrix had been infected. The court in the Iowa case held that such an examination by a physician under the direction of the prosecutor constituted an unlawful search and seizure, a denial of the privilege against self incrimination and a violation of due process. The court in the present case also referred to a number of discussions in legal periodicals in which the view has been taken that blood tests and physical examinations constitute *real* evidence not within the scope of the immunity against self incrimination. On historical precedent these articles argue that the privilege against self incrimination applies only to testimonial evidence. While leaning to the general philosophy underlying the decision in the Height case, the court here based its determination on another New Jersey law which expressly exempts a husband and wife in an action for divorce on the grounds of adultery from being compelled to give evidence for the other, except to prove the fact of marriage. The comprehensive word "evidence," the court pointed out, was used in this law, and is a broad, embracing term, including all classes of proof, testimonial or otherwise. As definitive of the term "evidence," the court quoted from 22 C. J. 66 as follows:

> While the term "testimony" is frequently employed as equivalent, in legal effect, to "evidence," such use is inaccurate, for the terms are not synonymous. "Evidence" is the broader term and includes all testimony, but "testimony" is accurately used to designate only a particular kind or species of evidence, namely, that which comes to the tribunal through living witnesses speaking under oath in the presence of the tribunal.

The provisions of the law exempting a husband and wife from being compelled to give evidence for the other, under the circumstances indicated, was in effect, the court said, a reenactment in comprehensive language of the common law immunity against self incrimination, as it applies particularly to suits for divorce on the ground of adultery. Furthermore, the court pointed out, it could not reasonably be held that the legislature, in authorizing the court to order the making of blood grouping tests, intended to repeal by implication a statute of such long standing, expressive of such an ancient and universally approved personal privilege.

To the court it seems strange that in none of the reported cases involving the issue here presented has the constitutional right to personal privacy and security been raised and debated. The right of privacy, the court said, has its foundation in the instincts of nature. It is recognized intuitively, consciousness being the witness to prove its existence. Any person of normal intellect recognizes at once that as to each individual member of society there are matters private and matters public. Each individual instinctively resents an encroachment by the public on his private rights. The right of privacy in matters purely private is derived from natural law. To subject a person against his will to a blood test, the court said, is an assault and battery and clearly an invasion of his personal privacy. It involves the sticking of a surgical needle into his body. Perhaps the operation is harmless in the great majority of cases, although the risk of infection is always present. But if it is admitted that such an encroachment on the personal immunity of an individual is authorized, where, the court questioned, in principle can we stop? If medical discovery in the future evolves a technic whereby the truth may infallibly be secured from a witness by trepanning his skull and testing the functions of the brain beneath, no one in the opinion of the court, would, contend that the witness could be forced against his will to undergo such a major operation, at the imminent risk of his life, in order to secure evidence in a suit between private parties. How then can he be forced to undergo a less dangerous operation, and at what point shall the line be drawn? In the opinion of the court, it is not the degree of risk to life, health or happiness which is the determinative factor but the fact of the invasion of the constitutional right to personal privacy. This was not a case, the court continued, in which the public interest required the making of the tests. Possibly there may be civil cases in which it could be argued that the

tests could be justified under the police power, for example a proceeding for custody where a substitution has inadvertently been made in a maternity hospital. But public policy does not favor divorce. It regards the family as a social unit and does not encourage the annulment or dissolution of that relationship. It recognizes, with the strongest presumption, the legitimacy of every child born in wedlock.

The granting of the application made in this case, concluded the court, would constitute an unconstitutional invasion of the right of personal privacy of the defendant and of the child. The application was therefore denied.—*Bednarik v. Bednarik, 16 A. (2d) 80 (N. J., 1940).*

Malpractice: Roentgen Treatments; Accrual of Right of Action.—In January 1935 the plaintiff consulted the defendant physician about a tumorous growth in her abdomen from which she was then suffering. The defendant advised the plaintiff, according to the allegations of her complaint, that he specialized in roentgenology and that he could guarantee to cure her with ten roentgen treatments. The plaintiff's complaint then alleged that she received her first roentgen treatment on Jan. 12, 1935 and the last one on Feb. 18, 1936, by which time she had taken ninety treatments instead of ten as originally contemplated. The defendant then gave her other types of treatment until May 1939. In a subsequent suit for malpractice against the defendant, filed on Nov. 16, 1939, the plaintiff claimed serious injury due to the excessive number of roentgen treatments. The defendant's demurrer to the complaint was sustained and the plaintiff appealed to the Supreme Court of Kansas.

The chief ground for sustaining the defendant's demurrer was that the action was barred by the two year statute of limitations. Although the basis for the plaintiff's cause of action was that the defendant had been guilty of negligence in giving her ninety roentgen treatments instead of ten as he "had promised, advised and agreed," she argued that the rendering of other professional services until May 1939, within two years of which the suit was filed, stayed the running of the statute until that time. The Supreme Court held that the two years allowed by the statute of limitations in which to commence an action for damages for malpractice begins to run from the time the wrongful act is committed. Since the roentgen treatments ceased in February 1936, the court held that an action for damages based thereon should have been commenced within two years of that date and was barred since not filed until November 1939. The judgment of the trial court, sustaining the demurrer to the complaint, was therefore affirmed.—*Becker v. Floersch, 110 P. (2d) 752 (Kan., 1941).*

Dental Practice Act: Validity of Disciplinary Procedure.—Written complaints were filed against the plaintiff dentists charging them with professional misconduct. Prior to a hearing, the plaintiffs filed suits for injunctions to restrain the Department of Registration and Education of the State of Illinois and its dental examining committee from proceeding on the written charges. The trial court refused to grant the injunctions and the plaintiffs appealed to the Supreme Court of Illinois.

The plaintiffs contended that the procedure in the dental practice act for the institution and hearing of complaints against licensed dentists was wanting in due process of law. The act authorizes the director of the Department of Registration and Education to revoke the license of a dentist on the written order of the dental examination committee. If the director disagrees with the conclusions or recommendations of the committee he may remand the case to the same committee or to a new one. The complaint in these cases were filed by a paid employee of the department at the request of the director. Therefore, the plaintiffs argued, the director can resubmit his own case to one committee after another until a recommendation satisfactory to himself has been returned, and the director thereby becomes the accuser, prosecutor and judge. The Supreme Court held, however, that there was nothing in the plaintiffs' cases which indicated the least degree of prejudice by the dental examining committee even though the charges were made by an employee of the department. The plaintiffs also argued that the act deprived them of due process of law because the director's order of revocation was self executing and no stay order could be issued pending an appeal except on ten days' notice and a hearing. They said that dentists would be caused irreparable damage and injury by not being able to practice their profession for ten days. The Supreme Court refused to pass on the contention, however, because that provision of the act had not been invoked against the plaintiffs and they were consequently not injured thereby, the court saying: "This court will not consider the constitutionality of a statutory provision where the party complaining has not been affected thereby nor in any way aggrieved by its operation." Finally, the plaintiffs argued that the proceedings were violative of due process because the written charges were not sufficiently definite and specific. The Supreme Court said that the charges in a proceeding of this nature are not required to be drawn with the "refinements, niceties, and subtleties of pleadings in courts of record." It is sufficient if the plaintiffs were fairly and reasonably apprised of the acts with which they were charged so that they could properly prepare their defense. The charges against the plaintiffs alleged specific acts of misconduct in violation of the dental practice act. The dates of the acts, the place they occurred and the manner in which the act was violated were also stated. The court concluded that a mere reading of the complaints demonstrated that they were sufficient to inform the plaintiffs of the nature of their unlawful acts. The injunctions were therefore properly denied. Judgments for the defendants were affirmed.—*Tarr v. Hallihan et al.; Marshack v. Same, 30 N. E. (2d) 421 (Ill., 1940).*

Malpractice: Injury Attributed to Radium Treatment of Facial Blemish; Suit Delayed Twelve Years.—In 1922, when the plaintiff was 4 years old, a pinkish area developed on her forehead which was diagnosed as a birthmark. The defendant, a dermatologist, attempted to remove the blemish with radium. At the time that treatment was instituted the pink mark started on the lower part of the forehead just above the nose and extended upward about 1 inch. It was about ¾ inch wide. During the next year or year and a half the condition spread upward, causing a strip of the patient's hair to fall out, so that there was left a bald path about an inch wide, extending back to the crown of her head. The frontal bones were affected, causing a depression in her forehead. Twelve years later, in 1934, the patient sued the defendant. At the close of the plaintiff's case the trial court, on motion of the defendant, withdrew the case from the jury and gave judgment for the defendant. On appeal to the Supreme Court of Ohio, the judgment for the defendant was reversed and the cause remanded for a new trial. (12 N. E. (2d) 283, *J. A. M. A.* **111**:652 (Aug. 13) 1938.) On a second trial, a judgment was entered for the plaintiff in the amount of $10,000, and the defendant appealed to the court of appeals of Ohio, Cuyahoga County.

The plaintiff first contended that the defendant was negligent in improperly diagnosing her condition as a birthmark when in fact it was scleroderma, which apparently was the final diagnosis. The evidence showed, however, that before the plaintiff was taken to the defendant she had been examined by two other physicians, each of whom had likewise diagnosed her condition as a birthmark. Furthermore, the court pointed out, the evidence was overwhelming, if not uncontradicted, that a birthmark and a discoloration resulting from scleroderma are indistinguishable in appearance, or by any other known test, and differ only in the manner of their development. The court of appeals was of the opinion that the record disclosed no evidence of negligence in diagnosis. In addition, the record was clear that no harm resulted to the plaintiff because of the initial diagnosis, for there was no evidence that the application of radium to either a birthmark or scleroderma would have had any harmful results unless the treatments were excessive or too frequent.

The plaintiff next contended that the second treatment given to her was in fact applied too soon after the first. At the second trial the plaintiff's father, mother and grandmother stated that the first time the defendant saw the plaintiff was in the fall of 1922 and that the second visit was two weeks later. The evidence showed, however, that the father and the grandmother

had, prior to the second trial, sworn that the first visit occurred in the spring of 1922. The court of appeals felt that the explanation given by the witnesses to justify this variance in their testimony was unsatisfactory. The defendant, on the other hand, testified that the two visits occurred on July 21, 1922, and Oct. 20, 1922, almost three months apart, his recollection being refreshed by the daily record which he kept. Furthermore, there was considerable evidence to the effect that applications of radium of the dosage used, two weeks apart, would have been in accordance with the standards of good practice in treating both scleroderma and a birthmark. Whether it would have effected a cure was dependent on circumstances, continued the court, but it was clear that no harm would result to a birthmark and that if the condition was scleroderma it would progress just as the condition of the plaintiff did with the appearance manifested in her case,

The plaintiff's mother testified that she concluded in 1923 that the defendant had burned her daughter and accused him of it. This testimony evoked the following comment from the court:

> While the statue of limitations would not run against the plaintiff during her minority, we are nevertheless of the opinion that a just appraisal of the testimony of her custodians requires the court to consider the fact that with full knowledge of the facts, they delayed filing this action for twelve years. Her custodians were adults. They had the power to institute this action during all those years. They knew the facts. Why such delay? Aggrieved persons ordinarily do not postpone asserting rights so long. We consider that in reaching our conclusion.

The court concluded that the judgment was manifestly against the weight of the evidence. Too, counsel for the plaintiff, in the opinion of the court, was guilty of such prejudicial conduct as would invalidate any trial. By reference to medical textbooks, not in evidence, the court said, and by unfounded assertions that large sums of money had been spent in the defense, and by other unfounded inferences, an atmosphere must have been created in which it was impossible for the jury to have distinguished between actual evidence submitted to them for analysis and these nonevidential assertions and innuendoes. Accordingly the judgment for the plaintiff was reversed and the cause again remanded to the trial court for further proceedings according to law.—*Hubach v. Cole, 31 N. E. (2d) 736 (Ohio, 1939).*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, N. J., June 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Atlantic City, N. J., June 8-9. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., June 1-3. Dr. Thomas C. Davison, 478 Peachtree St. N.E., Atlanta, Ga., Secretary.

American Association for the Surgery of Trauma, Boston, June 4-6. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association of Genito-Urinary Surgeons, Hershey, Pa., May 27-29. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Oral and Plastic Surgeons, New York, May 28-30. Dr. Frederick A. Figi, 102 Second Avenue S.W., Rochester, Minn., Secretary.

American Association of the History of Medicine, Atlantic City, N. J., May 3-5. Dr. Henry E. Sigerist, 1900 East Monument St., Baltimore, Secretary.

American Association on Mental Deficiency, Boston, May 13-16. Dr. Neil A. Dayton, 100 Nashua St., Boston, Secretary.

American Broncho-Esophagological Association, Atlantic City, N. J., June 8-9. Dr. Paul H. Holinger, 700 North Michigan Blvd., Chicago, Secretary.

American College of Chest Physicians, Atlantic City, N. J., June 6-8. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American College of Radiology, Atlantic City, N. J., June 10. Mr. Mac F. Cahal, 540 N. Michigan Avenue, Chicago, Executive Secretary.

American Dermatological Association, Hot Springs, Va., May 31-June 4. Dr. Harry R. Foerster, 208 East Wisconsin Ave., Milwaukee, Secretary.

American Diabetes Association, Atlantic City, N. J., June 7. Dr. Cecil Striker, 630 Vine Street, Cincinnati, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., June 8-9. Dr. J. Arnold Bargen, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Gynecological Society, Skytop, Pa., June 15-17. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Heart Association, Atlantic City, N. J., June 5-6. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Human Serum Association, Atlantic City, N. J., June 8. Dr. Maurice Hardgrove, 3321 North Maryland Ave., Milwaukee, Secretary.

American Laryngological Association, Atlantic City, N. J., May 25-27. Dr. Charles J. Imperatori, 108 East 38th St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., June 1-3. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Atlantic City, N. J., June 6-7. Dr. Ada Chree Reid, 102 East 22d St., New York, Secretary.

American Neurological Association, Chicago, June 4-6. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Baltimore, June 3-6. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Otological Society, Atlantic City, N. J., May 28-29. Dr. Isidore Friesner, 101 East 73d St., New York, Secretary.

American Proctologic Society, Atlantic City, N. J., June 7. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Psychiatric Association, Boston, May 18-22. Dr. Winfred Overholser, St. Elizabeths Hospital, Washington, D. C., Secretary.

American Radium Society, Atlantic City, N. J., June 8-9. Dr. Axel N. Arneson, 4952 Maryland Ave., St. Louis, Secretary.

American Society for Clinical Investigation, Atlantic City, N. J., May 4. Dr. Eugene M. Landis, University of Virginia Hospital, Charlottesville, Va., Secretary.

American Society of Clinical Pathologists, Philadelphia, June 5-7. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Atlantic City, N. J., June 5-6. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, New York, June 1-4. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Arizona State Medical Association, Prescott, May 25-30. Dr. W. Warner Watkins, 15 East Monroe St., Phoenix, Secretary.

Association for the Study of Internal Secretions, Atlantic City, N. J., June 8-9. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City, Secretary.

Association of American Physicians, Atlantic City, N. J., May 5-6. Dr. Hugh J. Morgan, Vanderbilt University Hospital, Nashville, Tenn., Secretary.

California Medical Association, Del Monte, May 4-7. Dr. George H. Kress, 450 Sutter St., San Francisco, Secretary.

Connecticut State Medical Society, Middletown, June 3-4. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Illinois State Medical Society, Springfield, May 19-21. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Kansas Medical Society, Wichita, May 11-14. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Maine Medical Association, Poland, June 21-23. Dr. Frederick R. Carter, 142 High Street, Portland, Secretary.

Massachusetts Medical Society, Boston, May 26-27. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Medical Library Association, New Orleans, May 7-9. Miss Anna C. Holt, 25 Shattuck St., Boston, Secretary.

Mississippi State Medical Association, Jackson, May 12-14. Dr. T. M. Dye, P. O. Box 295, Clarksdale, Secretary.

National Gastroenterological Association, New York, June 3-5. Dr. G. Randolph Manning, 1819 Broadway, New York, Secretary.

National Tuberculosis Association, Philadelphia, May 6-9. Dr. Charles J. Hatfield, 1790 Broadway, New York, Secretary.

Nebraska State Medical Association, Omaha, May 4-7. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 12-13. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Mexico Medical Society, Santa Fe, June 25-28. Dr. L. B. Cohenour, 221 W. Central Avenue, Albuquerque, Secretary.

New York State Association of Public Health Laboratories, Cooperstown, May 18. Miss Mary B. Kirkbride, New Scotland Ave., Albany, Secretary.

North Carolina, Medical Society of the State of, Charlotte, May 11-13. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Jamestown, May 18-20. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Pacific Coast Oto-Ophthalmological Society, Portland, Ore., May 11-14. Dr. C. Allen Dickey, 450 Sutter St., San Francisco, Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 17-20. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Secretary.

Rhode Island Medical Society, Providence, June 3-4. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

Society of Surgeons of New Jersey, Montclair, May 27. Dr. Walter B. Mount, 21 Plymouth Street, Montclair, Secretary.

South Carolina Medical Association, Myrtle Beach, May 19-21. Dr. Julian P. Price, 105 West Cheves St., Florence, Secretary.

South Dakota State Medical Association, Sioux Falls, May 13-15. Dr. Clarence E. Sherwood, 107½ Egan Avenue South, Madison, Secretary.

Texas, State Medical Association of, Houston, May 11-14. Dr. Holman Taylor, 1404 West El Paso St., Fort Worth, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

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*Field Study of Prophylactic Value of Pertussis Vaccine. J. E. Perkins, Albany, N. Y.; E. L. Stebbins, New York; Hilda Freeman Silverman, Albany, N. Y.; P. A. Lembcke, Rochester, N. Y., and B. M. Blum, New York.—p. 63.

Private Public Health Nursing Agency in Defense Program. Katharine Faville, New York.—p. 73.

Is There Need for the Fortification of Milk? E. V. McCollum, Baltimore.—p. 80.

Prophylactic Value of Pertussis Vaccine.—According to Perkins and his associates, a controlled study of the prophylactic value of phase 1 pertussis vaccine was conducted in Binghamton, N. Y., from January 1939 to November 1940; 587 children were given the complete series of injections and 699 acted as controls. The ages of the children varied from 6 months through 4 years. Reactions to the vaccine were negligible. Every family studied was visited once a month by a nurse who did not know which children had been vaccinated and which were controls. During the period of observation the attack rate of pertussis was more than twice as high in the control group as in the vaccinated group, and the pertussis when it did occur among the vaccinated group was distinctly less severe. The secondary household attack rate among the vaccinated group was 34 per cent as compared with 79 per cent among the controls.

Archives of Otolaryngology, Chicago

35:183-354 (Feb.) 1942

Nasal Glands. H. Brunner, Chicago.—p. 183.

Nasal Deformity in Anhidrotic Ectodermal Dysplasia. M. L. Lewin, New York.—p. 210.

Tuberculosis of Ear. B. Proctor, Detroit, and J. R. Lindsay, Chicago. —p. 221.

Acute Surgical Mastoiditis: Review of Cases, with Special Reference to Postoperative Hearing and to Role of Sulfanilamide and Its Derivatives in Therapy. R. E. Priest, Minneapolis.—p. 250.

Melanosis of Internal Ear. F. L. Lederer, Chicago.—p. 267.

Local Use of Sulfanilamide in Otogenic Infections. F. L. Bryant, Minneapolis.—p. 281.

Chronic Progressive Deafness, Including Otosclerosis and Diseases of Inner Ear. G. E. Shambaugh Jr. and W. S. Roberts, Chicago. —p. 291.

Archives of Surgery, Chicago

44:187-398 (Feb.) 1942

*Bacteriostatic Properties of Sulfanilamide and Some of Its Derivatives: I: Succinylsulfathiazole, a New Chemotherapeutic Agent Locally Active in Gastrointestinal Tract. E. J. Poth, F. L. Knotts, J. T. Lee and F. Inui, Baltimore.—p. 187.

*Clinical Use of Succinylsulfathiazole. E. J. Poth and F. L. Knotts, Baltimore.—p. 208.

Sodium Sulfadiazine in Treatment of Experimental Streptococcic Infection. B. McSwain and F. Glenn, New York.—p. 223.

Sulfadiazine in Experimental Streptococcic Infection: Study of Effects of Local Implantation. B. McSwain and F. Glenn, New York.—p. 231.

*Value of Chemotherapy in Treatment of Osteomyelitis. A. O. Wilensky, New York.—p. 234.

Effect of Administration of Lipocaic and Cholesterol in Rabbits. C. Vermeulen, L. R. Dragstedt, D. E. Clark, O. C. Julian and J. G. Allen, Chicago.—p. 260.

Convulsions During General Anesthesia: Report of Case. P. H. Lorhan, Kansas City, Kan.—p. 268.

Large Solitary Cysts of Kidney: Types, Differential Diagnosis and Surgical Treatment. R. Gutierrez, New York.—p. 279.

Effect of Asphyxia Caused by Bowel Distention on Concentration of Blood. W. D. Gatch and J. S. Battersby, Indianapolis.—p. 319.

Materials for Internal Fixation of Intracapsular Fracture of Neck of Femur. E. L. Compere, Chicago; G. Wallace, Rochester, Minn., and J. Lee, Los Angeles.—p. 327.

Role of Abdominal Distention in Leukocyte Exhaustion. J. Van Duyn 2d, Syracuse, N. Y.—p. 339.

*Incidence of Malignant Growth of Undescended Testicle: Critical and Statistical Study. H. E. Campbell, Denver.—p. 353.

Use of Extract of Mammalian Skeletal Muscle. P. L. Getzoff, G. C. Treatment of Ureteral Spasm: Observations with Special Reference to Tomskey and H. D. Ogden Jr., New Orleans.—p. 370.

Reconstruction of Stomach Outlet in Gastric Resection: Simple Suture for Use with Billroth 2 Oralis Totalis Type of Operation. H. May, Philadelphia.—p. 378.

Review of Urologic Surgery. A. J. Scholl, Los Angeles; F. Hinman, San Francisco; A. von Lichtenberg, Mexico, D. F., Mexico; A. B. Hepler, Seattle; R. Gutierrez, New York; G. J. Thompson, J. T. Priestley, Rochester, Minn.; E. Wildbolz, Berne, Switzerland, and V. J. O'Conor, Chicago.—p. 383.

Succinylsulfathiazole and Bacteriostasis.—In an endeavor to find a drug that would not be absorbed from the gastrointestinal tract in sufficient quantities to cause toxic manifestations and that would be effective in the presence of ulcerating intestinal lesions, Poth and his colleagues studied the bacteriostatic activity of eighteen sulfonamide combinations on the gastrointestinal mucosa of dogs. Succinylsulfanilamide and succinylsulfathiazole exerted a decided bacteriostatic activity on the coliform organisms. They possess relatively strong acid properties, liberating carbon dioxide from aqueous solutions of inorganic carbonates and bicarbonates. Succinylsulfathiazole is relatively resistant to chemical hydrolysis and is split by bacteria to yield sulfathiazole; in vitro its bacteriostatic activity against Escherichia coli in synthetic mediums is slight, it is poorly absorbed from the gastrointestinal tract and therefore a high concentration can be maintained there without causing untoward toxic reactions. Measured by its inhibition of the coliform flora of the intestine, it apparently

has a high bacteriostatic action in the gastrointestinal tract of man. Succinylsulfathiazole causes the stools to become semifluid and renders them relatively odorless. The drug is rapidly excreted by the kidneys, and its concentration in the blood remains low when it is administered orally. It has not caused severe toxic reactions in man. It is excreted by the liver, in which hydrolysis occurs. The administration of succinylsulfathiazole is suggested preoperatively for patients to be subjected to gastrointestinal operations and for patients with acute intestinal infections, such as typhoid and dysentery. The action of the drug is limited to its local effect on the contents of the gastrointestinal tract.

Clinical Use of Succinylsulfathiazole.—Poth and Knotts gave succinylsulfathiazole to 100 patients to alter the contents of the gastrointestinal tract. The patients either were convalescents with a normal intestinal mucosa or had typhoid, dysentery, diarrhea, carcinoma or fistula of the colon or the small intestine, ulcerative colitis or diverticulitis. In 5 the count of coliform bacilli was not lowered; in 2 there was severe, uncontrollable diarrhea; in 2 there were blind loops of intestine into which the drug did not enter, and in 1 there was intestinal indigestion, so that the stools did not become semifluid during chemotherapy. Because of the profound changes in the count of Escherichia coli in the feces, it is likely that various other organisms are affected. While conclusions cannot be drawn from this limited clinical study, the smooth convalescence experienced by the patient given succinylsulfathiazole preoperatively and postoperatively is impressive. One patient in whom anuria developed after a Miles operation for rectal carcinoma died.

Chemotherapy for Osteomyelitis.—Wilensky reviews the clinical effects of the sulfonamide drugs in the treatment of osteomyelitis. For primary osteomyelitis local, and later, if necessary, general, chemotherapy is indicated. In extension osteomyelitis, particularly that of the cranial bones, chemotherapy has not prevented the disease from spreading and complications from occurring. However, chemotherapy has shown some wonderful results in preventing complications, but even here all local areas of infection must be removed. For acute hematogenic osteomyelitis, chemotherapy is especially indicated in the stage of general infection; the danger of a progressive hidden pathologic process must be kept in mind. In actual practice the treatment of osteomyelitis with one of the sulfonamide derivatives has not produced the startling results obtained in some other conditions, notably pneumonia. Sometimes the proper interpretation of a good result in osteomyelitis is difficult because of the possibility that the beneficent change occurred spontaneously, as often happened before the advent of chemotherapy.

The Undescended Testis.—Data recorded in the literature suggest that the undescended testis is more liable to malignant change than the normally placed testis. The abdominal testis is more liable to malignant change than the inguinal. Campbell lists six reasons which have contributed to a lack of appreciation of these facts: 1. The medical profession has neglected the science of statistics by trying to draw conclusions from figures without knowing how to manage them. 2. Authors have committed almost incredible errors of misquotation. 3. Differing definitions of the words "cryptorchism," "cryptorchid," "ectopy," "anorchism" and "monorchism" have led to false conclusions. 4. Statistics have been published from hospital practice but not from private practice. 5. Early figures, in which a disproportion between the occurrence of malignant growth in the inguinal and the abdominal testis occurred, have been quoted. This disproportion no longer exists, probably because the abdomen is much more frequently explored. 6. The incidence of malignant change in the undescended testis has not been computed on the number of testes but on the number of patients; thus the true incidence of malignant change in bilateral undescended testes has not been determined. From the literature since 1900 a group of about 1,413 cases of undescended testis with a known incidence of malignant change has been collected, as well as 2,119 cases of undescended testis in which the relative incidence of abdominal and inguinal nondescent is known and 672 cases of malignant growth in the testis in which the relative frequency of abdominal and inguinal nondescent is known. One in about twenty abdominal testes shows a malignant change, as against one in about eighty inguinal testes. Combined hospital figures reveal about equal numbers of abdominal and inguinal malignant growths. This is because the proportion of inguinal to abdominal testes is about 4:1 and the proportion of cancerous inguinal to cancerous abdominal testes is about 1:4.

Bulletin of Johns Hopkins Hospital, Baltimore

70:1-100 (Jan.) 1942

Distribution of Certain Oxidative Enzymes in Choroid Plexus. J. S. Friedenwald, H. Herrmann and R. Buka, Baltimore.—p. 1.
Choline Esterase Content of Choroid Plexus and Ciliary Processes. H. Herrmann and J. S. Friedenwald, Baltimore.—p. 14.
*p-Aminobenzoic Acid as Metabolite Essential for Bacterial Growth. C. R. Park and W. B. Wood Jr., Baltimore.—p. 19.
Study of Mechanical Factors in Circulation, with Special Reference to Problem of Acute Circulatory Failure. P. B. Price, H. E. Sloan Jr. and F. T. LaRochelle, Baltimore.—p. 26.
Reaction of Subcutaneous Tissues to Acetone Insoluble Lipids from Beef Brains. Edna H. Tompkins, Nashville, Tenn.—p. 55.
Demonstration of Basilar Artery and Its Branches with Thorotrast. A. B. King, Baltimore.—p. 81.
Anterior Commissure Tendon of Larynx: Its Significance in Laryngofissure Operation: Preliminary Note. E. N. Broyles, Baltimore.—p. 90.

p-Aminobenzoic Acid and Bacterial Growth.—Park and Wood have shown experimentally that *p*-aminobenzoic acid, though ineffectual by itself, is extremely active as a bacterial growth factor when traces of biotin are present. Therefore they conclude that *p*-aminobenzoic acid is essential to bacterial metabolism and that it may well be involved in the antibacterial action of the sulfonamide drugs.

Illinois Medical Journal, Chicago

81:81-168 (Feb.) 1942

Senile Ectasy: Clinical Study of Aging Human Heart (Observations on 400 Patients). R. S. Berghoff, A. S. Geraci and D. A. Hirsch, Chicago.—p. 97.
Surgical Treatment of Deafness. G. E. Shambaugh Jr., Chicago.—p. 104.
Medical Care of Public Assistance Recipients. C. H. Phifer, Chicago.—p. 109.
Analysis of Presbyopia. R. H. Woods, LaSalle.—p. 111.
Diabetic Coma with Anuria Relieved by Large Amounts of Insulin and Fluid. H. W. Shuman, Rock Island.—p. 115.
Report of Cooperative Program for Control of Syphilis by General Practitioner and Illinois Department of Public Health. H. M. Solomway, Springfield.—p. 118.
Poliomyelitis in Infant Four Months of Age Diagnosed in Preparalytic Stage. J. H. Hess, S. O. Levinson and E. R. Hess, Chicago.—p. 124.
Pruritus in Medicine and in Dermatology. M. S. Wien, Chicago.—p. 125.
Treatment of Saphenous Varicosities. R. E. Heller, Chicago.—p. 131.
Delayed Rupture of Spleen: Discussion and Case Report. R. G. Lommen, Chicago.—p. 135.
Tetanus Toxoid in Prevention of Tetanus and Serum Reactions in Allergic Individuals. L. Unger, Chicago.—p. 139.
Urinary Infections in Childhood. E. W. White and C. A. Murray, Chicago.—p. 144.
Night Secretion of Free Hydrochloric Acid in Stomach. F. C. Valdez, Chicago.—p. 149.
Comments on Early Diagnosis and Treatment of Anterior Poliomyelitis. A. J. Fletcher, Danville.—p. 152.

Indiana State Medical Assn. Journal, Indianapolis

35:59-122 (Feb.) 1942

Treatment of Coronary Thrombosis. F. M. Smith, Iowa City.—p. 59.
*Inhibition of Chemotherapeutic Action of Sulfapyridine by Local Anesthetics. H. M. Powell, M. E. Krahl and G. H. A. Clowes, Indianapolis.—p. 62.
Organization of Therapy in Treatment of Arthritics. R. Pemberton, Philadelphia.—p. 64.
Report of Case of Embryonic Carcinoma (Seminoma) of Spermatic Cord. A. V. Cole and E. A. Campagna, East Chicago.—p. 67.
Facts and Fallacies Concerning Modern Anesthesia. P. M. Wood, New York.—p. 69.
Anesthetic Agents and Anesthetic Failures. J. M. Whitehead, Indianapolis.—p. 74.
Simple Device for Administering Intravenous Barbiturate. Lillian B. Mueller, Indianapolis.—p. 77.
Practice of Ophthalmology. F. M. Ruby, Union City.—p. 78.

Inhibition of Sulfapyridine by Local Anesthetics.—Powell and his co-workers state that their experiments on mice have demonstrated that local anesthetics derived from *p*-aminobenzoic acid inhibit the antipneumococcic action of sulfapyridine. Local anesthetics not derived from *p*-aminobenzoic acid did not exert this effect.

Journal of Infectious Diseases, Chicago

70:1-96 (Jan.-Feb.) 1942

Studies on Arthrotropic Pleuropneumonia-like Micro-Organisms. H. Beeuwkes and W. A. Collier, Batavia, Java, Netherland East Indies. —p. 1.

Studies on Chemical Prophylaxis of Experimental Poliomyelitis. E. W. Schultz and L. P. Gebhart, Stanford, Calif.—p. 7.

Utilization of Carbon and Nitrogen Compounds by Coccidioides Immitis (Rixford and Gilchrist, 1896). E. E. Baker and C. E. Smith, San Francisco.—p. 51.

Persistence of Antibodies One Year After Active Immunization of Human Beings with Mixed Heat Killed Vaccine of Bacillus Typhosus, Brucella Abortus and Brucella Melitensis. J. A. Kolmer, A. Bondi Jr. and Anna M. Rule, Philadelphia.—p. 54.

Sulfanilylguanidine and Sulfanilamide in Treatment of Lymphogranuloma Venereum Infections of Mice. Enid C. Rodaniche, Chicago. —p. 58.

Infection of Mice by Feeding with Tissues Containing Virus of St. Louis Encephalitis. C. G. Hartford and J. Bronfenbrenner, St. Louis. —p. 62.

Studies on Lactobacilli: III. Relationship of Immunologic Specificity and Fermentative Capacity. R. W. Harrison, Chicago.—p. 69.

Id.: IV. Changes in Immunologic Specificity Associated with Changes in Fermentation Reactions. R. W. Harrison, Chicago.—p. 77.

Comparison of Recently Developed Macroscopic Agglutination Test for Diagnosis of Leptospiral Jaundice with Standard Microscopic Test. Elizabeth B. Starbuck and T. G. Ward, Baltimore.—p. 88.

Bacteriophage Therapy: IV. Effect of Bacteriophage in Experimental Staphylococcic Septicemia in Rabbits. S. E. Sulkin, D. D. Douglass and J. Bronfenbrenner, St. Louis.—p. 92.

Journal of the Mount Sinai Hospital, New York

8:321-1176 (Jan.-Feb.) 1942. **Partial Index**

Acute Generalized Postoperative Peritonitis Simulating Coronary Artery Occlusion. S. H. Averbuck, New York.—p. 335.

Brown-Séquard Syndrome in Association with Tuberculous Spondylitis and Pulmonary Silicotuberculosis. L. F. Barker, Baltimore.—p. 341.

Significance of Negative T Waves in All Three Standard Leads of Electrocardiogram. A. R. Barnes and H. B. Burchell, Rochester, Minn.—p. 346.

*Paroxysmal Tachycardia in Very Early Infancy. M. H. Bass, New York.—p. 357.

Pericarditis and Subacute Bacterial Endocarditis. D. Beck, New York. —p. 364.

*Ligation of Splenic Artery for Thrombocytopenic Purpura and Congestive Splenomegaly. A. A. Berg and N. Rosenthal, New York. —p. 382.

Angina Pectoris and Peptic Ulcer Syndrome: Preliminary Report. E. P. Boas and H. Levy, New York.—p. 422.

*Kidneys in Subacute Streptococcus Viridans Endocarditis. H. A. Christian, Brookline, Mass.—p. 427.

Diagnosis of Aneurysm of Heart. J. H. Crawford, Brooklyn.—p. 469.

*Nephrotic Crisis. K. Emerson Jr. and D. D. Van Slyke, New York. —p. 495.

Coarctation of Aorta: New Theory as to Its Pathogenesis. C. K. Friedberg, New York.—p. 520.

Prophylactic Implantation of Estrogens Following Surgical and Radium Castration. S. H. Geist, R. I. Walter and U. J. Salmon, New York. —p. 543.

Effect of Roentgen Therapy in Primary Cancer of Breast. W. Harris, New York.—p. 606.

Neuropsychiatric Manifestations of Vitamin Deficiencies. N. Jolliffe, New York.—p. 658.

*Pleural Mesothelioma. P. Klemperer and C. Tedeschi, New York. —p. 710.

Use of High Fat and High Purine Diets in Diagnosis of Gout. C. McEwen, New York.—p. 854.

Putrid Empyema Without Fetid Sputum ("Surprise" Empyema). H. Neuhof, New York.—p. 892.

Inoculation Malaria and Drug Addiction. E. B. Schoenbach and C. L. Spingarn, New York.—p. 998.

Transient Ventricular Fibrillation: Study of Fibrillary Process and Its Development in Man. S. P. Schwartz, New York.—p. 1005.

Thromboangiitis Obliterans and Polycythemia Vera. S. Silbert, New York.—p. 1021.

Blood Iodine in Period After Thyroidectomy: Preliminary Report. S. Silver and B. Magasanik, New York.—p. 1027.

Methylation of Hydroxyl Groups in Triazines: Studies in Triazines: III. H. Sobotka and Edith Bloch, New York.—p. 1032.

Syphilitic Aortitis with Aortic Regurgitation: Electrocardiographic and Autopsy Survey at Massachusetts General Hospital. H. B. Sprague, Boston.—p. 1034.

Comparison of Simultaneous Indirect (Auscultatory) and Direct (Intra-Arterial) Measurements of Arterial Pressure in Man. J. M. Steele, New York.—p. 1042.

Self Observations and Psychologic Reactions of Medical Student A. S. R. to Onset and Symptoms of Subacute Bacterial Endocarditis. S. Weiss, Boston.—p. 1079.

Paroxysmal Tachycardia in Infancy.—Bass discusses the occurrence of extreme paroxysmal tachycardia in 2 infants at 3 weeks of age and in 1 at 4 months. One infant recovered; 2 died. No known cause has been discovered for the syndrome. All 3 patients vomited, had extreme pallor and refused to take food. A striking feature was a decided enlargement of the liver. In 2 patients the tachycardia responded to medication. The patient who lived was definitely saved by digitalization. However, even after the drug had been administered and the heart rate had fallen and a sinus rhythm had been reestablished the tachycardia would reassert itself and continue for many hours, but after three days the heart rate became normal and remained so. In 1 of these 2 patients injections of calcium gluconate reduced the rate for several hours, but the flutter always returned. The injection of isotonic solution of sodium chloride accomplished the same effect, although sinus rhythm continued for only a few minutes. Large doses of digitalis failed to save this infant. The third patient's attack was so violent that death ensued in three days. Permission for a necropsy of this infant was not obtained. It is possible that some preexisting cardiac anomaly may have been present (congenital hypertrophy?). This patient received digitalis as soon as the author saw her, but as she was already moribund neither giving digitalis nor giving a 25 per cent solution of nikethamide nor immediate administration of oxygen was of any avail. Pressure on the eyeballs or on the neck over the carotid sinus was valueless.

Ligation of Splenic Artery.—Berg and Rosenthal ligated the splenic artery of 2 patients with thrombocytopenic purpura, of 3 with cirrhosis of the liver with splenomegaly and fascial constriction of the artery and of 1 with osteosclerotic anemia (myelofibrosis), or nonleukemic myelosis. Only a transitory good effect was experienced by the first 2 patients; the decided recurrence of the condition necessitated secondary splenectomy. Ligation was followed by a definite diminution in the size of the spleen of the 3 patients with congestive splenomegaly; 2 of them survived for one year and 1 for three years. The ascites of the latter 1 subsided for two years. The patient with osteosclerotic anemia had slight improvement for only a short period after the ligation. The spleen had apparently diminished in size and again attained its former size about six weeks after operation. The "drosselung," or constriction of the artery, did not influence the progressive weakness, anemia and general condition of the patient. Except in some instances of congestive splenomegaly the results do not warrant the continuance of such a procedure as a substitute for splenectomy. Splenectomy is superior, and it at least removes the element of uncertainty which accompanies ligation of the splenic artery.

Kidneys in Subacute Endocarditis.—Christian describes pathologic lesions observed in the kidneys of 61 patients who died of subacute endocarditis caused by Streptococcus viridans. Macroscopically the kidneys are slightly swollen and edematous and there are areas of infarction, usually of the anemic variety, and focal hemorrhages, which cause the "flea bitten" appearance described by Horder. In 42 the infarct was observed on gross inspection; in 14 it was observed only under the microscope. Surface focal hemorrhage was present in the kidneys of 8 patients. Microscopically a variety of glomerular lesions, both diffuse and focal in distribution, were observed: acute intracapillary proliferative glomerulonephritis in 80.32 per cent and diffusely distributed, hyaline thickening of the walls of the glomerular capillaries in 16.39 per cent. Five types of focal glomerular lesions were seen: proliferation of the capsular epithelium in 36.06, focal fibrous lesions in 26.23, occasionally complete disorganization of glomeruli, hyaline fibrinoid thrombi in glomerular vessels in 40.98 and masses of bacteria in glomerular capillaries in 6.55 per cent. The focal lesions were present in varying frequency in sections from different kidneys; they rarely dominated the microscopic picture. Albuminuria was present in 78.69 per cent of the patients, and cylindruria was not prominent. Hematuria was found in 75 per cent of the patients. The presence of numerous blood cells in the sediment of the urine suggests a diffuse or focal, proliferative, glomerular lesion rather than infarction or fibrinoid glomerular thrombi. Decreased renal function, indicated by a decreased excretion of phenolsulfonphthalein or an elevation of blood urea nitrogen, was observed in one fourth of the patients, but in none of them did it result in symptoms of uremia.

Nephrotic Crisis.—Emerson and Van Slyke include all acute febrile episodes with symptoms of peritonitis under the term nephrotic crisis. The symptoms occur and recur in nephrotic children, with or without demonstrable bacteremia. Farr, MacFadyen, MacLeod and their collaborators show that the attack

is preceded by a loss of body nitrogen and a dramatic fall in the amino acid of the plasma. Recovery is regularly accompanied by a rise in the amino acid of the plasma. The intravenous administration of amino acid appears to reduce the mortality rate. Prior to the administration of amino acid the mortality rate was 66 per cent, whereas there were no deaths among 11 patients less than 10 years of age who had thirty-two crises and were given amino acid intravenously. Only 1 patient so treated died. This was an older patient who in addition to the nephrotic crisis had an infection that was resistant to sulfapyridine.

Pleural Mesothelioma.—Klemperer and Tedeschi report a case of diffuse neoplasm of the pleura which arose from the cells lining the mesothelium. The complex structure of the tumor, composed chiefly of lipophagic reticulum cell-like elements and of cells which resembled lymphocytes in different phases of development, is explained by the multiple developmental potentiality of the mesoderm which comprises the coelomic "mesothelium." Throughout the entire illness there was no suggestion of a neoplasm in any other part of the body, and at necropsy no other primary growth was found. The following microscopic observations supported this view: There were strands of dense connective tissue growing inward from the thickened pleura and often lined by a noncontinuous layer of mesothelial cells in atypical proliferation. The capillaries, with severe fibrous thickening of their walls resulting in the formation of large hyaline bodies, were numerous. There were masses of peculiar cells within the loculi formed by the intersecting fibrous trabeculae.

Journal of Nutrition, Philadelphia

23:101-204 (Feb.) 1942. **Partial Index**

*Effect of Controlled Ascorbic Acid Ingestion on Urinary Excretion and Plasma Concentration of Ascorbic Acid in Normal Adults. Clara A. Storvick and Hazel M. Hauck, Ithaca, N. Y.—p. 111.
Interrelationship of Manganese, Phosphatase and Vitamin D in Bone Development. G. F. Combs, L. C. Norris and G. F. Heuser, Ithaca, N. Y.—p. 131.
Fetal Rat Parathyroids as Affected by Changes in Maternal Serum Calcium and Phosphorus Through Parathyroidectomy and Dietary Control. J. G. Sinclair, Galveston, Texas.—p. 141.
Biotin in Chick Nutrition. D. M. Hegsted, R. C. Mills, G. M. Briggs, C. A. Elvehjem and E. B. Hart, Madison, Wis.—p. 175.
*Iron Requirement of Children of Early School Age. Frances A. Johnston and Lydia J. Roberts, Chicago.—p. 181.
*Ascorbic Acid Requirements of Children. O. A. Bessey and Ruth L. White, Boston.—p. 195.

Vitamin C Metabolism in Adults.—Storvick and Hauck determined the daily urinary excretion of ascorbic acid and the fasting levels of ascorbic acid for twenty-one twenty-eight day periods in the plasma of 2 normal men and 4 women on controlled intakes of ascorbic acid. From the response to the test dose at the end of each period, supplements of 65 to 150 mg. of ascorbic acid, in addition to approximately 10 mg. in the basal diet, were required by the subjects for maintaining tissue saturation.

Iron Requirement of Children.—To determine the requirement of iron by preschool children, Johnston and Roberts selected 12 boys and 8 girls from 8 to 11 years of age who for several years had lived in an institution whose standards of nutrition and physical care are high. The children's hemoglobin levels at the start of the investigation were considered a product of their diet. Matched groups of 3 children were given graded amounts of iron for seven months, after which the hemoglobin level was again determined. The data indicate that a good hemoglobin level can be maintained on a daily intake of 11.4 mg., or 0.35 mg. per kilogram of body weight, when the rest of the diet is adequate. A higher intake is not needed, as the hemoglobin level of children given 2 or 4 mg. of supplementary iron daily for seven months did not rise. It is possible that a lower intake might have been adequate.

Ascorbic Acid Requirements.—Bessey and White estimated the requirement of ascorbic acid by determining the level of the acid in the blood plasma of 93 healthy city children receiving variable amounts of ascorbic acid in their food. The data indicate that 3 ounces (90 cc.) of orange juice a day, or its equivalent in other citrus fruit juice, or 6 ounces (180 cc.) of tomato or tangerine juice, plus the small amount of the acid that obtains in other foods, which probably totals not more than 10 mg. a day, is sufficient to produce an optimal postabsorptive concentration of ascorbic acid in the plasma of the average child 5 to 13 years of age. Orange juice is assumed to contain 15 mg. of ascorbic acid per ounce; therefore the daily requirement may be placed at 40 to 50 mg. The amount of ascorbic acid obtained from food other than citrus fruits and tomatoes was insufficient to influence the level of ascorbic acid in the blood plasma. This emphasizes the necessity of a regular consumption of citrus fruits or tomatoes if an optimal postabsorptive value is to be maintained.

Journal of Pharmacology & Exper. Therap., Baltimore

74:99-238 (Feb.) 1942. **Partial Index**

In Vitro Action of Sulfonamides on Lymphogranuloma Venereum Virus. E. C. Holder, Sonnia Levine and J. G. M. Bullowa, New York.—p. 99.
Study of Toxic Properties of Tung Nuts. J. L. E. Erickson and J. H. Brown Jr., Baton Rouge, La.—p. 114.
Delay in Onset of Action of Intravenously Injected Anesthetics. T. C. Butler, Nashville, Tenn.—p. 118.
Intravenous Injections of Soluble Bismuth Compounds: Their Toxicity and Their Sojourn in Blood and Organs. T. Sollmann and J. Seifter, with technical assistance of G. H. Mangun, E. S. Rambousek and J. A. O'Hare, Cleveland.—p. 134.
Fate of Certain Sympathomimetic Amines in Body. K. H. Beyer and W. V. Lee, Madison, Wis.—p. 155.
Action of Certain Sulfonamides, Sulfones and Related Phosphorus Compounds in Experimental Tuberculosis. M. I. Smith, E. W. Emmart and B. B. Westfall, Bethesda, Md.—p. 163.
Studies on Sulfonamide Resistant Organisms: I. Development of Sulfapyridine Resistance by Pneumococci. L. H. Schmidt, Clara Sesler and H. A. Dettwiler, Cincinnati.—p. 175.
Effect of Multiple Substituents on Toxicity and Treponemicidal Activity of Phenylarsenoxide. H. Eagle, R. B. Hogan, Baltimore; G. O. Doak and H. G. Steinman.—p. 210.
*Study of Antidotes for Fluorine. S. Marcovitch and W. W. Stanley, Knoxville, Tenn.—p. 235.

Antidotes for Fluorine.—According to Marcovitch and Stanley, the fluoborates when fed in powdered form were nontoxic to rats and insects. In solution, enough fluorine was liberated to produce toxic effects. Aluminum sulfate and hydrated lime protect animals from a lethal dose of sodium fluoride when mixed with the latter. Boric acid, through the formation of a fluoborate, also has some value as an antidote. Aluminum sulfate mixed with the sodium fluoride and used as a roach powder produces a lower kill than is obtained with sodium fluoride alone. To prevent the mistaking of sodium fluoride for flour, sugar or baking powder, some manufacturers are now coloring it a nile blue. As a further precaution the National Pest Control Association suggests that more be known about its antidotes.

Kentucky Medical Journal, Bowling Green

40:1-40 (Jan.) 1942

Hemorrhagic Diathesis. M. F. Beard, Louisville.—p. 4.
The General Practitioner and the State Hospital. I. Kimbell, Lakeland.—p. 7.
Suppurative Diseases of Lung. L. W. Nehil, Louisville.—p. 11.
Pulmonary Tuberculosis Simulating Nontuberculous Lesions. E. R. Gernert, Louisville.—p. 16.
Pneumonia. R. A. Bate Jr., Louisville.—p. 19.
Common Lesions of Larynx. J. S. Bumgardner, Louisville.—p. 22.
Diagnosis and Management of Lesions of Stomach, Duodenum and Jejunum. F. H. Lahey, Boston.—p. 26.
Obstetric Observation. C. W. Reynolds, Covington.—p. 33.

Military Surgeon, Washington, D. C.

90:1-112 (Jan.) 1942. **Partial Index**

Résumé of Recent Activities. H. D. Corbusier.—p. 1.
Investigations Concerned with Problems of High Altitude Flying and Deep Diving: Application of Certain Findings Pertaining to Physical Fitness to General Military Service. A. R. Behnke Jr.—p. 9.
Psychoneuroses as They Pertain to Military Service. F. P. Pignataro.—p. 29.
Evaluation of Heart Signs in Navy Recruiting. E. F. Lowry.—p. 37.
*Sulfapyridine "8-7-7-6" Treatment of Acute Gonorrheal Urethritis in Male: Report on Sixty-Eight Cases Followed for Eight Months, Supplemented by General Discussion. J. P. Pappas.—p. 45.
Medical Care at Reception Center. M. S. Saslaw and E. B. Oliver.—p. 57.
Note on Performance of Mass Urinalysis. J. C. Bock and C. R. Neterval.—p. 60.
Plasma Protein, Its Physiology Relative to Normal and Failing Peripheral Circulation. F. B. Marsh.—p. 76.

Sulfapyridine Treatment of Acute Gonorrheal Urethritis.—Pappas used the four day intensive course of sulfapyridine for the treatment of 59 soldiers with acute previously untreated gonorrhea and 9 who had previously failed to be cured

with sulfanilamide. The method employed was that suggested by Winter in 1940: the "8-7-7-6" plan, or the administration of 8, 7, 7 and 6 Gm. of sulfapyridine on the respective four days of treatment. Fifty-three, or 90 per cent, of the 59 patients were apparently cured and were returned to duty after an average of fourteen and four-tenths days of hospitalization. The 6 patients not cured had a definite amelioration of symptoms, but evidence of drug failure was demonstrable either during or soon after the completion of chemotherapy. The 53 patients could have been returned to duty in an average period of five and three-tenths days if irrigations and provocative tests had been omitted. The 9 patients who were resistant to sulfanilamide responded to sulfapyridine treatment. Their average stay in the hospital was seventeen and one-tenth days, but they could have been returned to duty in about eight and three-tenths days if provocative tests had not been done. Eight patients were followed up for an average of three and five-tenths months and 54 for an average of eight months. There were no relapses of infection even though many immediately indulged in alcoholic and venereal excesses. Practically all of them were subjected to the physical stress and strain incident to marches and maneuvers in the jungle during March 1941. The author believes that the institution of inadequate drainage early during chemotherapy and small oral doses with the erratic individual absorption rates are the primary factors responsible for sulfapyridine resistant infections, asymptomatic carrier states and consequent late relapses.

New England Journal of Medicine, Boston

226:173-212 (Jan. 29) 1942

Cancer of Breast: Results of Surgical Treatment at Collis P. Huntington Memorial Hospital. C. C. Simmons, Boston.—p. 173.
*Psychiatric Aspects of Ulcerative Colitis. G. E. Daniels, New York.—p. 178.
*Chemotherapy in Gonococcic Infections. O. F. Cox, Boston.—p. 184.
Recent Advances with Chemotherapy in Treatment of Infections of Urinary Tract. E. N. Cook, Rochester, Minn.—p. 187.
Traumatic Obstruction of Main Bronchus: Report of Case. M. D. Tyson and J. S. Lyle, Hanover, N. H.—p. 192.
Protein of Cerebrospinal Fluid in Patients with Chronic Alcoholism. E. H. Trowbridge Jr. and L. Secunda, Boston.—p. 195.
Renal Function Tests. J. H. Talbott, Boston.—p. 197.

Ulcerative Colitis.—During the last ten years Daniels has seen 25 persons with ulcerative colitis; most of them were referred by physicians for psychiatric consultation and treatment. Of 14 followed for five to eight years, 8 showed a pathologic attachment to a relative (in 6 the death of this relative had been of paramount importance), indecision about marriage was definite in 2 unmarried members, in 2 engagement and marriage were the precipitating causes of the first attack and in 2 the onset of symptoms was associated with childbirth. Financial difficulties had a special significance in 4. As a group the patients were not well adjusted sexually, although generally this was not the presenting problem. Except for the basic factors relating emotions to disturbances of the large intestine, the psychophysiologic mechanism of ulcerative colitis is not understood. Observations in mucous and spastic colitis may eventually aid in elucidating the mechanism. Much can be said of the relation of personality to disease of the colon. The author's impression is that the difference lies in the more narcissistic organization of the personality in ulcerative colitis, with the underlying reaction more a psychotic than a psychoneurotic one. At times the symptoms mask a severe depression. The recurrent character of the disorder may be significant in this regard. In several instances the disease seemed definitely a type of organic suicide. In many instances there is a direct relation between the severity of the physical reaction and the underlying psychopathologic condition. Psychoneurosis rarely causes death; psychosis frequently does.

Gonococcic Infections.—Cox points out that of 440 men with gonococcic infection treated at the Boston Dispensary with sulfathiazole only 265 entered the clinic during the first week of infection with no previous treatment and were under observation long enough for a series of cultural studies to be done. Of the 265, 41 had clinically active gonococcic infection at the end of the second week, and in addition 26 became asymptomatic within two weeks but one or more cultures were positive between the first and eighth weeks after the patients were free from symptoms. The remaining 198 patients represent the cure rate that can definitely be attributed to sulfathiazole. There was no significant difference in the cure rate of those men who had and those who did not have local treatment. There were few toxic symptoms, and none were serious enough to necessitate withdrawal of the drug. However, sulfathiazole is not entirely without toxic possibilities; drug fever, rash, nausea, headache and renal complications have been reported.

226:213-250 (Feb. 5) 1942

Use and Abuse of Electrocardiogram in Medical Practice. H. M. Marvin, New Haven, Conn.—p. 213.
*Right Upper Quadrant Pain on Effort: Early Symptom of Failure of Right Ventricle. N. H. Boyer and P. D. White, Boston.—p. 217.
Congenital Hydronephrosis in Lower Half of Double Kidney: Report of Case. S. Feyder and C. L. Deming, New Haven, Conn.—p. 220.
Pulmonary Tuberculosis and Pregnancy. R. H. Baker and A. D. Ward, Worcester, Mass.—p. 224.
Heterogeneous Renal Disorders. J. H. Talbott, Boston.—p. 228.

Pain on Effort.—Boyer and White encountered 4 persons in whom pain of the upper right quadrant precipitated by exertion and relieved by rest was the presenting symptom of early failure of the right side of the heart. It is evidently due to acute hepatic congestion and is comparable to dyspnea on effort in early failure of the left side of the heart. Direct questioning of a group of 40 patients who had clinical evidence of failure of the right side of the heart or who were likely subjects revealed that 45 per cent had such pain at some time. The pain is a symptom to which the patient rarely attaches much significance, as it is overshadowed by other, more severe, symptoms. The symptom, if sought diligently, may prove to be a common and reliable warning of early weakness of the right ventricle.

New York State Journal of Medicine, New York

42:193-288 (Feb. 1) 1942

Effectiveness of Sulfonamides on Bacteria Encountered in Infections of Upper Part of Urinary Tract. R. C. Borst, Utica.—p. 217.
Chronic Pyelonephritis. R. M. Nesbit and K. B. Conger, Ann Arbor, Mich.—p. 225.
Follow-Up Study of So-Called Pyelitis in Children. E. Slotkin, Buffalo.—p. 233.
Some Common Problems in Management and Diagnosis of Contact Dermatitis. A. R. McFarland, Rochester.—p. 239.
Diverticulum of Female Urethra. M. Rashbaum and G. P. Seley, New York.—p. 243.
Chronic Hypertrophic Osteoarthritis in Cervical Spine with Radiculitis: Report of Forty Cases with Review of Literature, Together with Some Notes on Effective Methods of Treatment—Part II. L. C. Kelly, New York.—p. 246.
Medicine Marches On. B. L. Shientag, New York.—p. 252.

42:289-384 (Feb. 15) 1942

Surgical Interruption of Pallidofugal Fibers: Its Effect on Syndrome of Paralysis Agitans and Technical Considerations in Its Application. R. Meyers, Brooklyn.—p. 317.
*Value of Helium in Prevention of Explosions of Anesthetic Mixtures: Experimental Data. G. J. Thomas and G. W. Jones, Pittsburgh.—p. 326.
Results of Treatment with Bacillus Coli Metabolin in Allergic Rhinitis. H. H. Shilkret, New York.—p. 332.
Chronic Hypertrophic Osteoarthritis in Cervical Spine with Radiculitis: Report of Forty Cases with Review of Literature Together with Some Notes on Effective Methods of Treatment—Part III. L. C. Kelly, New York.—p. 336.

Helium in Anesthetic Mixtures.—Thomas and Jones outline a method for preventing the explosion of combustible anesthetic mixtures. The method is based on the fact that not every combustible gas, vapor or dust will burn or explode when its oxygen content, different for each combustible, is reduced below certain definite values. In the case of combustible anesthetics, their concentration cannot be altered to any great extent because definite amounts are required for the desired degree of anesthesia. Nonexplosibility must therefore be brought about by replacing part of the oxygen with a flame quenching medium and one that is not objectionable to the patient breathing the mixture. The relative explosibility of cyclopropane-oxygen-helium, ether-oxygen-helium and ethylene-oxygen-helium mixtures is given, and it is shown that ether requires the lowest range of oxygen concentration, ethylene assumes an intermediate position and cyclopropane permits a high concentration of oxy-

gen to be present while nonexplosive conditions are maintained. Therefore helium can be used to the best advantage in cyclopropane-oxygen mixtures for the prevention of explosions and to a slight advantage with ethylene or ether-oxygen mixtures.

Review of Gastroenterology, New York

9:1-90 (Jan.-Feb.) 1942

*Importance of Gastroscopy in Differentiating Gastric Ulcer and Carcinoma. L. H. Clerf and C. W. Wirts Jr., Philadelphia.—p. 1.
Evaluation of Gastric Disease Since Advent of Flexible Gastroscope: Report of 100 Cases. H. L. Segal, Rochester, N. Y.—p. 7.
Use of Pentothal Sodium Intravenous Anesthesia for Gastroscopic Examination. T. S. Heinicken, Bloomfield, N. J., and H. I. Roseman, Montclair, N. J.—p. 13.
Treatment of Generalized Peritonitis Following Ruptured Appendixes: Teamwork of Surgeon and Gastroenterologist; Report of Sixty-Five Consecutive Cases. A. L. Levin, J. T. Nix and J. T. Nix Jr., New Orleans.—p. 15.
Nonreactive Alumina in Treatment of Peptic Ulcer. L. J. Boyd, W. R. Russ and H. Barowsky, New York.—p. 20.
Gastrointestinal Allergy. E. Urbach, Philadelphia.—p. 26.
Chronic Gastritis. C. P. Pritchett and P. T. Knies, Columbus, Ohio. —p. 32.
Influence of Endocrines on Gastrointestinal Symptomatology. J. E. Cox, Memphis, Tenn.—p. 40.
Guises of Vitamin Deficient States. M. G. Wohl and J. T. Freeman, Philadelphia.—p. 46.
Influence of Nutrition on Occurrence of Peptic Ulcer. R. R. Ehrmann, New York.—p. 52.
Traumatic Diaphragmatic Hernia. W. Heinemann, New York.—p. 54.
Chronic Amebiasis. L. C. Sanders, Memphis, Tenn.—p. 62.
Malignancies of Rectum and Anus. F. Conlan, Pittston, Pa.—p. 66.
Indications for Gastric Surgery. E. A. Marshall, Cleveland.—p. 71.
Diagnostic Problems in Gallbladder Disease. J. N. Rich, Philadelphia. —p. 76.

Gastroscopy in Differentiating Gastric Ulcer and Carcinoma.—The experience of Clerf and Wirts with 14 cases of gastric ulcer and 20 of gastric cancer emphasizes the importance of gastroscopic examination. Roentgen study suggested that in 9 of 11 cases of gastric ulcer the ulcer was probably malignant and that in 2 it was probably benign. In each of these 11 cases a diagnosis of benign ulcer was made gastroscopically. In 8 improvement followed medical management and the lesion disappeared completely, and in 3 the benignity of the lesion was proved at operation. In 3 of the remaining cases of gastric ulcer, roentgen study failed to reveal a lesion but an ulcer was seen gastroscopically. In 2 of these, medical treatment caused the lesion to disappear, and in the third the ulcer, because of its size and thickened edges, was considered malignant at the first gastroscopic examination but later was proved to be benign. The roentgenologist described the lesion in 11 of the cases of cancer of the stomach as "possibly" or "probably" malignant, whereas at gastroscopic examination a definite diagnosis of a malignant growth was made in each case. The diagnosis in 9 was proved at operation and in 2 by peritoneoscopy; both of the latter showed metastasis. Roentgen examination failed to show a gastric lesion in the 9 remaining cases, in which gastroscopy revealed carcinoma. In 7 of these cases operation confirmed the diagnosis, in 1 operation was refused and 1 was considered a poor surgical risk because of advanced diabetes mellitus.

Union Médicale du Canada, Montreal

71:113-222 (Feb.) 1942. **Partial Index**

*Clinical Study of Epidemic of Poliomyeltis and Encephalitis Supervening in 1941 in the West of the United States and Canada. W. J. McCormick, Toronto.—p. 127.
Remarks on Acute Meningitis. Roma Amyot, Montreal.—p. 140.
Cancer of Pancreas: Presentation of Two Cases with Necropsy, One of Them with Diabetes and Icterus. J. LeSage and J. Olivier, Montreal. —p. 152.
Volvulus of Cecum: Postoperative Complication. C. Lefrancois, Montreal.—p. 159.
Surgical Treatment of Convergent Strabismus. A. Panneton, Trois Rivières, Que.—p. 168.

Epidemic of Poliomyelitis and Encephalitis.—McCormick investigated in Winnipeg hospitals the alimentary habits and the excessive physical exertion of patients in the course of a simultaneous epidemic of poliomyelitis and encephalitis. He reviews the clinical histories of a certain number of patients of each group. All the patients who were questioned had had a diet extremely poor in vitamin B. The majority had been physically overworked before the onset of the disease. In some cases the disease itself had been preceded by certain forerunning signs which lasted for weeks, months or years. This premonitory period suggests a predisposition or the existence of certain factors which, when associated, at a given moment give rise to the acute phase of the disease. This conception ill accords with the role classically attributed to contagion but harmonizes well with the author's theory of avitaminosis. In support of this theory he cites a certain number of observations concerning the age and sex of the patients and the seasonal variations of the frequency of poliomyelitis and encephalitis. He also discusses the role which avitaminosis may play in equine encephalomyelitis. In connection with the virus the author proposes a new theory which considers the biochemical by-products of avitaminosis, explaining by this fact the failure of preventive and therapeutic measures commonly employed. A laboratory technic remains to be found which will detect the avitaminosis in the victims of these disorders. It is also necessary to try vitamin B therapy in the acute and the convalescent periods of these epidemic diseases. Since the present treatment of poliomyelitis and encephalitis is ineffective and since B avitaminosis is almost general, the author suggests that double the quantity of vitamin B_1 that is normally necessary be given as a prophylactic measure to children during the summer vacation period and to laborers who work in an overheated atmosphere.

Wisconsin Medical Journal, Madison

41:1-100 (Jan.) 1942

Pyrexia Test: Differentiation of "Functional" Fever from That of Infectious Origin. M. J. Fox, Milwaukee.—p. 19.
*Laryngotracheobronchitis. W. J. Troup and D. F. Weaver, Green Bay. —p. 21.
Pneumoencephalogram in Children. M. G. Peterman, Milwaukee.—p. 26.
*Pneumonia in Children Treated with Sulfapyridine. J. A. Bigler, Chicago.—p. 29.
Irradiation Treatment of Carcinoma of Cervix. H. D. Kerr, Iowa City. —p. 34.
Adequacy of Iodized Salt for Goiter Prevention. E. L. Sevringhaus and J. H. Barbour, Madison.—p. 40.
Evaluation of Medical Treatment in Rheumatoid Arthritis. G. W. Carlson, Appleton.—p. 42.

Laryngotracheobronchitis.—Troup and Weaver discuss the salient features of laryngotracheobronchitis and stress the importance of cooperation by all persons concerned in its treatment. Laryngotracheobronchitis is characterized by intense inflammation of the larynx, trachea and bronchi. The product of inflammation forms a sticky, gumlike exudate in the air passages and obstructs them. The disease in its typical fulminating form occurs most often in children less than 2, and it is in them that the mortality rate is so high. It does attack older children, but in them it is not so severe or fulminating. The mucosa and submucosa of the trachea and bronchi are involved by the inflammation from the larynx. The result of treatment depends on an early diagnosis, and hence internists and pediatricians should acquaint themselves with all the clinical, bronchoscopic and pathologic phases of the disease. The mild form of the disease responds to adequate fluid intake, steam inhalations and oxygen therapy. For the fulminating form tracheotomy, the prevention of plugs and crusts in the trachea and bronchi by keeping the air in the room hypersaturated with moisture, keeping up the fluid and food intake and the bronchoscopic removal of plugs or crusts if they form despite the measures mentioned are indicated.

Sulfapyridine for Pneumonia in Children.—Bigler states that during the last eighteen months sulfapyridine has been used for the treatment of 244 children with pneumonia. From the clinical and the roentgen examination a diagnosis of lobar pneumonia was made in 197 and of bronchopneumonia in 47. The temperature of the patients with lobar pneumonia returned to normal and they were clinically improved within an average of one and one-tenth days, as compared to an average of five and two-tenths days for a group not receiving chemotherapy. The period of hospitalization averaged three and six-tenths days longer for the patients not receiving sulfapyridine. Sulfapyridine did not seem to influence the frequency or the course of complicating empyema. The drug was also moderately successful in the treatment of bronchopneumonia. The mortality was low for both series of patients. Minor toxic manifestations due to sulfapyridine were common.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

29:165-284 (Oct.) 1941

Filigree Operation for Inguinal Hernia. P. P. Cole.—p. 168.
Bone and Cartilage Transplants: Their Use and Behavior. R. Mowlem. —p. 182.
Elephantiasis of Penis. J. C. Ross.—p. 194.
Cleft Palate and Mechanism of Speech. M. C. Oldfield.—p. 197.
Carcinoma of Colon in Children: Report of Case. V. Pennell and L. C. Martin—p. 228.
Cleavage Lines of Skin. H. T. Cox.—p. 234.
Spontaneous Fracture of Apparently Normal Neck of Femur. K. S. Mullard.—p. 241.
Duodenal Atresia: Case Report of Successful Gastroenterostomy. P. M. Kelly.—p. 245.
Anaphylactoid Purpura Simulating Acute Regional Ileitis. C. G. Barnes and G. W. Duncan.—p. 253.
Spontaneous Renoinguinal Fistula in Calculous Tuberculous Pyonephrosis. H. S. Shucksmith.—p. 256.
Adenoma of Epididymis with Note on Solid Tumors of Epididymis: Case. G. Gordon-Taylor and C. Ommaney-Davis.—p. 260.
Adenoma of Epididymis. C. E. M. Blumer and J. L. Edwards.—p. 263.
Islet Adenoma of Pancreas: Case. T. N. Rudd and J. Walton—p. 266.
Persisting Vitelline Remnants. C. Somerville-Large and D. Eastman-Nagle.—p. 271.

British Medical Journal, London

1:1-30 (Jan. 3) 1942

*Analysis of Vasomotor Phenomena (Faints) Occurring in Blood Donors. Helen Brown and P. McCormack.—p. 1.
Local Effectiveness of Sodium Sulfacetamide (Albucid Soluble) in Treatment of Experimental Ulcers of Cornea. J. M. Robson and G. I. Scott.—p. 5.
Delay in Union of Fractures. T. P. McMurray.—p. 8.
Suicidal Compromises: Psychopathy and Rehabilitation. H. Wilson. —p. 9.
*Sulfathiazole Ointment in Treatment of Impetigo. A. J. Steigman. —p. 12.

Vasomotor Phenomena Occurring in Blood Donors.—Brown and McCormack discuss the vasomotor phenomena observed in 48, or 5 per cent, of a group of blood donors. The phenomena are commonly called "faints," although loss of consciousness is not common. When a donor faints the head is immediately lowered, and the donor remains on the bleeding couch until well enough to walk to the recovery room. Half of the donors who fainted had a history of previous fainting, either associated with or independent of bleeding and nervousness. About as many faint after the full amount of blood has been taken as faint during the actual donation. It is sometimes reported that donors have fainted after their return to work, and probably the incidence of fainting is higher after than during venesection. The most common symptoms and signs are flushing, pallor, sweating, slowing of the venous stream, convulsions, a lowering of the blood pressure and pulse rate, faintness, dizziness and giddiness. Nausea or an uneasy feeling in the epigastrium and a feeling of heat, if they occur, are usually the first indication that something is wrong. Other, less common, symptoms are a sensation of tingling, general numbness, yawning, a desire to defecate, blurred vision and ringing in the ears. Donors often sleep after a severe faint. Faints may be (1) mild with a transitory pallor, clamminess, faintness and a lowering of the pulse and blood pressure, (2) severe with great pallor, drenching perspiration and an extreme fall in pulse rate and blood pressure, (3) mild or severe with vomiting, (4) mild or severe with convulsions and (5) mild or severe with vomiting and convulsions. The recovery period may vary from a few minutes to an hour or more. It is not uncommon for donors to improve temporarily and then to relapse. The donors are not alarmed by their experience. The vasomotor phenomena of the faints have many points in common with those of the "effort syndrome" in soldiers. The fact that the faints of most donors take place in the recumbent position may account for the fact that consciousness is not lost as it is in the effort syndrome of soldiers. The venesection may also possibly be a modifying factor. The author believes that the faints are brought about by the same efferent pathways as those in the carotid sinus syndrome.

Sulfathiazole Ointment for Impetigo.—Steigman compared the relative value of two ointments by treating one side of 20 impetigo patients with ammoniated mercury and the other side with a 5 per cent sulfathiazole ointment. The latter ointment was prepared by incorporating 5 per cent by weight of powdered sulfathiazole in a base of soft petrolatum. After the second day of treatment (the ointments were applied three times a day) it was possible to state which preparation had been used on each side. Impetigo treated with the ammoniated mercury healed rather slowly though steadily, requiring an average of eight days. Impetigo treated with the 5 per cent sulfathiazole ointment showed improvement in forty-eight hours and was healed by the fourth or fifth day. In addition to the 20 mentioned, 31 other patients were treated with 5 per cent sulfathiazole ointment without the author's attempting a comparison. The lesions of these patients were also noticeably improved in forty-eight hours and healed in four to five days. Impetigo of the scalp was more resistant, and for 7 patients with this condition an average of eight days was required for healing. The impetigo was often accompanied by scabies, and treatment of the parasitic infestation was greatly facilitated by clearing up the impetigo first. Antiscabies therapy could then be carried out more efficiently, with less discomfort and fewer recurrences.

Glasgow Medical Journal

19:1-32 (Jan.) 1942

Wartime Problems of the Cardiologist. C. Brannwell.—p. 1.

Medical Journal of Australia, Sydney

2:661-688 (Dec. 13) 1941

Demyelination: Clinicopathologic and Experimental Study. E. W. Hurst.—p. 661.
*Hemochromatosis, with Special Reference to Supervening Carcinoma of Liver. R. A. Willis.—p. 666.
Torulosis in Queensland. K. H. Hooper and J. S. Wannan.—p. 669.
Brenner Tumors of Ovary: Report of Case. J. D. Hicks.—p. 671.
Esophagitis of Infants. D. Reye.—p. 673.

2: 689-728 (Dec. 20) 1941

The Principle of Health. C. I. McLaren.—p. 689.
Some Observations on Use of "Pentothal Sodium" Under War Conditions. S. V. Marshall.—p. 694.
Examination of Recruits for Army. R. J. Taylor.—p. 700.
Id. F. H. M. Callow.—p. 702.

2:729-754 (Dec. 27) 1941

Medical Men and Literature. H. B. Graham.—p. 729.
Some Observations on Effects of Selective Irradiation of Stomach in Cases of Chronic Nonobstructive Duodenal Ulcer with Hyperchlorhydria. W. P. Holman and R. A. Lewis.—p. 735.
Present and Future Organization of Medical Profession. B. W. Monahan.—p. 740.

1:1-32 (Jan. 3) 1942

Two Items of Recent Branch History. F. W. R. Lukin.—p. 1.
Thiamine (Vitamin B_1) Content of Human Milk. E. C. Slater and E. J. Rial.—p. 3.
Symptoms of Partial Vitamin B_1 Deficiency in Breast Fed Infants. F. W. Clements.—p. 12.

Hemochromatosis.—Willis gives an account of the postmortem data on 7 fatal cases of hemochromatosis, or bronze diabetes, observed at the Alfred Hospital during the last six years. In 3 of the 7 patients the liver exhibited multicentric carcinoma. Their ages at death ranged from 38 to 72 years, conforming with Sheldon's conclusion that the disease is rarely seen in young people. Except for the patient who died at 38 from an unrelated complaint with no clinical evidence of bronze diabetes, the age at death of all patients exceeded 48 years. Six of the 7 patients were men. In Sheldon's analysis the ratio of male to female patients was 20:1. The male predominance is probably even greater, as the disease, being rare in women, is more likely to be reported when it occurs in them. Hemochromatosis is of slow development and of long duration. Even after the syndrome is recognized, patients often live for many years. No significant relationship to any particular occupation has been established. The fully developed disease is recognized by the triad diabetes, pigmentation of the skin and hepatic enlargement and later ascites. The most obvious and constant macroscopic observation at necropsy is the distinctive pigmentation of the liver, pancreas and neighboring lymph glands. The liver, if seen in an early preclinical stage of the disease, as in the author's youngest patient, may show typical pigmentation before it is either cirrhotic or enlarged, or it may be cirrhotic but not enlarged. On the cut

surface the pigmentation of the liver usually shows a distinct and characteristic lobular pattern, which, as microscopic examination shows, is largely because the deposits of pigment are heaviest in the liver cells at the margins of the cirrhotic lobules. In the pancreas, as in the liver, it is also probable that pigmentation precedes fibrosis, with most pigmentation in the parenchyma cells. Microscopic study does not support either of two commonly held ideas regarding the causation of the diabetic state: that it is due to pancreatic fibrosis with atrophy of the islet cell tissue or that it is due to impaired function of the islet cells because of overloading by pigment. Therefore the diabetic state must be related to hemochromatosis in some more subtle way. The spleen is usually slightly to moderately enlarged and gives a positive prussian blue reaction. The characteristic pigmentation is often obscured by its naturally being dark red. Sometimes heavy pigmentation may be seen in the gastric and intestinal mucous membranes, the myocardium and the adrenals. The presence of carcinoma in 3 of the 7 cases suggests that the frequency of this complication may heretofore have been underestimated. The carcinomas were malignant hepatomas, and they almost invariably appeared to have arisen independently in multiple foci. The disease recalls the multiple development of malignant lesions in susceptible areas. Advanced hemochromatosis is clearly just such a precancerous state with regard to the hepatic cells, and when hepatic carcinoma supervenes the entire liver must be looked on as incipiently cancerous. The tumors remain unpigmented; macroscopically they are white and contrast sharply with the surrounding brownish red hepatic tissue. Microscopically no pigment granules are found in them.

Practitioner, London

148:65-128 (Feb.) 1942

The Common Cold. W. H. Wynn.—p. 65.
Management of Acute Nasal Sinusitis and Its Complications. C. Gill-Carey.—p. 70.
Nasal Sinusitis in Children. J. Crooks.—p. 76.
Chronic Nasal Catarrh. T. R. Rodger.—p. 82.
Hay Fever. G. W. Bray.—p. 88.
Sulfonamides: Some Pharmaceutic Observations. W. K. Fitch.—p. 93.
National War Formulary, 1941. R. St. A. Heathcote.—p. 101.
Practical Points in Treatment of Diabetes Mellitus. A. Patrick.—p. 105.
Clinical Review of Encephalitis. W. G. Wyllie.—p. 111.
Heart Disease of Old Age. C. B. Perry.—p. 117.

Deutsche Zeitschrift für Nervenheilkunde, Berlin

152:1-108 (Feb. 24) 1941

*Interpretation of Electroencephalogram. J. Ohm.—p. 1.
*Successful Surgical Treatment of Intracranial Cholesteatomas: Three Cases. V. Graser.—p. 13.
Permeation Capacity of Wassermann Reagins into Cerebrospinal Fluid and Persistence of Specific Reactions in Cerebrospinal Fluid. G. Säker.—p. 29.
Clinical and Pathological Aspects of Spinal Arachnoiditis. A. Juba.—p. 37.
Pathologic Cough Reflex: Pathophysiology of Thalamus Syndrome. L. von Angyal.—p. 57.
Question of "Symptomatic" Zoster. C. Mumme.—p. 67.
*Cerebrobioelectrical Investigations in Genuine Epilepsy. A. E. Kornmüller and R. Janzen.—p. 78.

Interpretation of Electroencephalogram.—Ohm points out that Berger's invention of the electroencephalograph in 1924 signified a great advance in research on the brain. The author's studies on miners' nystagmus may throw light on the interpretation of electroencephalographic records. The records Ohm made of miners' nystagmus greatly resemble electroencephalographic records. In all curves the waves are nearly sinus shaped. He suggests that the oscillations of the eye muscles in nystagmus disclose the oscillations of a brain center. In a book entitled Nystagmus as Brain Radiation, published in 1924, he concluded that the vital function of the ganglion cell consists in a production of pendulum-like (i. e. sinus shaped) electrical oscillations. This capacity of the sinus cell is intrinsic (intrinsic tonus); it reacts to incoming stimuli with a change in frequency (extrinsic tonus). The neurons of the optic tract have a rhythmic action even in the dark (dark tonus), but they act with a lower frequency than in the presence of illumination (light tonus). Frequency is the essential characteristic of the ganglion cell; amplitude is not characteristic. The nystagmus curves record the activity of a small center in the vestibular nuclei; the electroencephalogram, however, is taken from an extensive region of the cranium. The differences in the curves obtained by Berger and Rohracher and by Kornmüller the author ascribes to the fact that the first named investigators made their records from the intact cranium whereas Kornmüller took his recordings directly from the surface of the brain.

Surgical Treatment of Intracranial Cholesteatoma.—Graser reports 3 cases of cholesteatoma successfully treated by surgical intervention. The first patient, a man aged 31, had sudden acute symptoms with attacks of convulsion, paralysis and aphasia. The symptoms suggested a malignant bleeding glioma, but the arteriogram excluded this diagnosis and suggested a benign tumor. The exact type of the tumor could not be determined before operation. The sudden onset may have been caused by serous meningitis following disintegration and absorption of the tumor or by circulatory disturbances in the region of the anterior cerebral artery. A postoperative febrile condition with stupefaction and a dreamy twilight state is ascribed to the same cause. The fact that for a long time the tumor caused no symptoms might be explained by the extracerebral, well circumscribed position of the tumor. The tumor of the second patient, a man aged 33, was typical of a slowly growing, benign tumor. The neurologic symptoms suggested a tumor of the posterior cranial fossa, possibly of the acoustic nerve, the cerebellum or the medulla oblongata. The air picture disclosed outlines of the tumor on the roof of the fourth ventricle. Operation disclosed a cholesteatoma of the fourth ventricle with attachment at the calamus scriptorius. Patient 2 also had a central fever after the operation. The third patient, a man aged 57, remained free from a postoperative increase in temperature. The benign, slowly growing tumor, which involved the left temporo-parieto-occipital region, early produced a clear pathologic picture. The arteriogram and phlebogram proved of differential diagnostic value. Roentgenoscopy without a contrast medium disclosed typical bone arrosions above the extradural cholesteatoma. The mental functions of patient 3 improved slowly after the operation; he was completely normal after several months.

Cerebrobioelectrical Investigations in Genuine Epilepsy.—Kornmüller and Janzen report investigations on 43 patients with genuine epilepsy and on 3 with pyknolepsy. Emphasis was placed on the care with which each patient was examined over long periods. On a number of patients registrations were made continuously for twenty-four hours. The authors describe cerebrobioelectrical manifestations not associated with the attack and during the attack. The question of the epileptogenic focus still dominates research on epilepsy. Animal experiments indicated that an epileptogenic focus is bioelectrically characterized by the appearance of convulsion current discharges. The evaluation of the cerebrobioelectrical observations during the attack furnished the authors with a new point of view for the interpretation of bioelectrical manifestations during the interval. It was observed that during minor epileptic attacks abnormally slow oscillations appear over extensive regions. These records resemble those obtained during the interval either spontaneously or during hyperventilation. During the minor attacks the cortical changes can be regarded as effects of noncortical foci. The abnormal manifestations during the interval presumably have an analogous origin. If the clinical manifestations give no indication of an attack-like abnormal process, it can probably be explained from the localization of the primary point of attack of the epileptogenic stimulus. According to this interpretation there would be no difference between some only bioelectrically detectable interval manifestations and certain minor attacks. It must be assumed also that abnormal processes may take place which are detectable neither bioelectrically nor clinically. From a primary focus the function of various other gray parts is modified by nervous channels, and these secondary foci exert effects on a third group of areas, and so on. Thus rather complicated mechanisms must be expected; during the attack more functional connections will probably become evident than is the case under physiologic conditions.

Book Notices

Occupational Diseases: Diagnosis, Medicolegal Aspects and Treatment. By Rutherford T. Johnstone, A.B., M.D., Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles. Cloth. Price, $7.50. Pp. 558, with 132 illustrations. Philadelphia & London: W. B. Saunders Company, 1941.

The effects of environment on health, and particularly of occupation on morbidity and mortality, have intrigued the curiosity of many astute medical observers. Under this traditional form of self improvement the medical and allied professions have accumulated a body of information designed to recognize and manage individual examples of intoxication or other ill effects of uncontrolled working environment. This volume on the occupational diseases is the best compilation to date of verified and practical experience in the fields of diagnostic and remedial industrial medicine. It still leaves for other hands or future editions of the book to develop in much stronger terms the important concept that the hope of industrial medical service lies in prevention. This attitude can hardly be developed in professional minds through relatively inconspicuous discussions of prophylaxis under treatment. The last few decades have witnessed an enormous acceleration of scientific interest in the prevention of occupational disease, most noticeable in recent years under the program of attack by official and other agencies set up to explore and control industrial exposure. The effect of these programs will certainly have an influence on the point of view of the whole profession about industrial disability.

Good professional management of industrial accidents and diseases is, and always will be, a great medical responsibility. Johnstone's chapters on medicolegal considerations ably reflect this point of view and at the same time underscore again the physician's bewilderment that such important legislation is so frequently framed without seeking competent advice about all medical aspects. Occupational disease compensation schedules have been adopted without any reference to the character of regional industrial exposures. Only recently has there been any effort to base remedial legislation on surveys of actual working conditions and on the character of occupational disease reporting. Medical organizations must strenuously object to such illogical methods just as much as they object to senseless limitations in medical and hospital benefits, admission of bad or biased medical testimony, or other loose administrative practices.

The main objective of the book is to deal consecutively with all the common and many uncommon causes of occupational disability including the industrial back, hernia, the dermatoses and the troublesome neurosis and malingering problems. Certain sections possibly may not withstand careful scrutiny by advanced workers in this field, but for all ordinary purposes and especially for the physician in community practice these discussions will carry the imprint of wide experience and judicious selection. The reported 11,000 annual admissions to the author's clinic, representing multiple and varied diseases and conditions, will be a source of mingled envy and concern to all other industrial clinicians—envy at this enormous concentration of material and concern that preventive industrial medicine and industrial hygiene have made such little headway in southern California. To a generation of employers, workers and physicians who are coming to recognize the considerable effect of occupational disability on the public health, the obvious suggestion will be to emphasize much more strongly in works of this character specific instruction in those fundamental medical and hygienic principles on which eradication of occupational disease must ultimately rest.

Seasonal Influence on Growth, Function and Inheritance. By A. B. Fitt. New Zealand Council for Educational Research, Educational Research Series No. 17. Cloth. Price, 10s. 6d. Pp. 182, with 11 illustrations. Christchurch, N. Z.: Whitcombe & Tombs, Ltd.; London: Oxford University Press, 1941.

This monograph represents the author's extracurricular pursuit of a scientific hobby for over a quarter of a century. While his findings might have been of interest to American readers of a decade ago, the facts can today be found much more adequately presented in the writings of Huntington (Season of Birth), Mills (Medical Climatology) and various other authors to whom Fitt makes no reference. While familiar with the literature of twenty-five years ago, the author seems not to have kept well abreast of more recent work. The greater part of the monograph deals with the physiologic and health aspects of seasonal influences; here the author's lack of medical or physiologic training becomes painfully evident as he flounders along through numerous and inconclusive citations. The build-up to his final chapter on conclusions and implications leaves the reader quite at sea regarding the purpose of the book. Because infant mortality and general death rates are low in the autumn and high in late winter and early spring, Fitt concludes that general vitality is highest in the autumn months, quite overlooking the fact that vitality may well be highest in those very winter and spring months when unstable weather brings greatest frequency of respiratory infections. The graphs are poorly done and lack uniformity. No basis whatever can be found for including "inheritance" in the book's title. There is little that is new or worth while for American medical readers in this publication.

Psychogenic Factors in Bronchial Asthma. Part II. By Thomas M. French, M.D., and Franz Alexander, M.D., With the collaboration of Catherine L. Bacon, M.D., et al. Psychosomatic Medicine Monographs Volume II, Nos. I and II. Published with the Sponsorship of the Committee on Problems of Neurotic Behavior, Division of Anthropology and Psychology, National Research Council. Paper. Price, $3. Pp. 236. Washington, D. C.: National Research Council, 1941.

This monograph consists of the records of 11 adults and 7 children, sufferers from bronchial asthma, who were experimentally treated by psychoanalysis at the Chicago Institute for Psychoanalysis. It is the work of eleven authors and is published as the second part of a larger monograph. Part I, published earlier in the same year and reviewed in THE JOURNAL Dec. 20, 1941, gave a summary and an interpretation of the findings in these and 9 other unreported cases in adults and indicated certain constant features in the psychology of the asthma patient and the asthma attack. The patient's great dependence on a mother or mother figure, a greater proportion of dreams dealing with pregnancy abortion and intrauterine existence, replacement of the infantile crying reaction by the asthmatic attack, and several minor findings were found uniformly, and a chapter could in effect be written that might well appear in a textbook description of asthma—a chapter on the psychology of the asthmatic and of the asthmatic attack. The relation of allergy to the attack and its psychologic provocation was speculatively considered, and the two factors were seen as complementary. It was pointed out that the attacks occurred when there was an unresolved conflict and tension rather than when there was a true or even partial expression of instinctual activity. The present monograph (part II), which is purely descriptive, will give the interested reader an opportunity to learn the empirical basis for such statements. Particularly it furnishes detailed accounts of the exact psychologic situations that precipitate the attacks. The protocols are extensive enough too to furnish to the interested reader insight into many particulars not dealt with in the summary.

State Board Questions and Answers for Nurses: Essay and Objective Types Compiled from Actual Examination Questions Given Throughout the Country by State Examining Boards. Twentieth edition, 1942 revision. Fabrikoid. Price, $3.50. Pp. 1,084. Philadelphia, Montreal & London: J. B. Lippincott Company, 1942.

This book comprises hundreds of questions compiled from examinations for nurses given throughout the country by state examining boards and the answers. It is arranged in four parts: (1) biologic and physical science, (2) medical science, (3) nursing and allied arts, (4) nursing ethics and history of nursing. The book opens with a short chapter on suggestions to assist nurses in preparing for passing state examinations. The subdivisions are indexed in order to make it simple to find questions on particular subjects; for example, questions relating to bone and cartilage appear from pages 3 to 20, questions concerning nursing during the puerperium from pages 725 to 735, questions concerning general nursing care of children from pages 832 to 851, and so on. The book is edited by eleven women, mostly nurses who occupy important positions on the staffs of universities, hospitals and examining boards. Aside from its value to nurses preparing to pass state board examinations, the book offers much of practical value to others interested in the nursing care of the sick.

Mule Spinners Cancer: Epithelioma of the Skin in Cotton Spinners. By E. M. Brockbank, M.B.E., M.D., F.R.C.P., Medical Referee for Industrial Diseases, Manchester. Boards. Price, 4s. Pp. 36, with illustrations. London: H. K. Lewis & Co., Ltd., 1941.

The author of this small monograph has had an opportunity to see a great many cases of epithelioma of the skin commonly known as mule spinners' cancer, and therefore his comments and conclusions are valuable to any one interested in this type of malignant growth. The monograph is written from the industrial point of view and covers the subject thoroughly, recommending periodic examination of workers in the cotton spinning industry and emphasizing preventive measures to the workers. It also contains specifications for several lubricating oils. There are six illustrations showing early epithelioma of the skin and one depicting the machine which gives this type of epithelioma its name.

Symptom Diagnosis: Regional and General. By Wallace Mason Yater, A.B., M.D., M.S., Professor of Medicine and Director of the Department of Medicine, Georgetown University School of Medicine, Washington, D. C. Originally written by the late Wilfred M. Barton, A.M., M.D., F.A.C.P., and Wallace M. Yater, A.B., M.D., M.S. Fourth edition. Fabrikoid. Price, $10. Pp. 900. New York & London: D. Appleton-Century Company, Incorporated, 1942.

The fourth edition of this practical book includes seventeen tables of differential diagnosis and some other features that are distinctly new. The two indexes have been combined. Obviously not as many changes are necessary in a work of this type as would be involved in one devoted largely to therapy, since the advances in diagnosis come more slowly and must be extensively confirmed before they can be given the status of conclusion in an authoritative book. The arrangement of the volume permits ready reference to any symptom with which the physician may be concerned, and the cross references enable more extended study once a lead has been found toward a positive diagnosis.

Business Procedures. By Perry R. Taylor. Joint Committee of the Twentieth Century Fund and the Good Will Fund; and Medical Administration Service, Inc. Paper. Price, 25 cents. Pp. 109. Boston: Edward A. Filene Good Will Fund, 1941.

As a pioneer effort in the field of accounting and business practices for prepayment medical plans, this work will be welcomed by all concerned in organizing and conducting such plans. Lack of experience with such plans necessarily makes the detailed instructions in accounting, collection and general office procedures largely theoretical. Contract group plans occupy the center of discussion with only occasional references to medical society plans, although the medical societies now provide medical care to several times as many persons as all the contract plans.

Professional Dentistry in American Society: A Historical and Social Approach to Dental Progress. An Introductory Text for Students and Professional Health Workers. By Alfred J. Asgis, Ph.D., D.D.S., Assistant Professor of Oral Surgery and Lecturer on Orientation at the New York University College of Dentistry. Student edition. Cloth. Price, $3.50. Pp. 175, with illustrations. New York: Clinical Press, 1941.

Dentistry came into existence as a profession much later than medicine. The "period of professional awakening, 1820-1840, preceded the establishment of medical schools and the rise of medical journalism." Dentistry has now reached a state in which it can be considered "as an oral health service." It is playing its part in public health and in the development of a preventive program. The author is inclined to favor the application of some type of insurance to dental care. He is especially anxious that dental education should include training in the social problems affecting dentistry, and this volume is intended to be an introductory textbook to further that object.

Organization and Administration of Group Medical Practice. By Dean A. Clark, M.D., and Katharine G. Clark. Joint Committee of the Twentieth Century Fund and the Good Will Fund; and Medical Administration Service, Inc. Paper. Price, 25 cents. Pp. 109. Boston: Edward A. Filene Good Will Fund, 1941.

The work as a whole fills the need for frequently requested information for a working manual on the organization and conduct of group practice. Its most significant weakness is that such organizations as the University of Chicago Clinics and the Mayo Clinic are discussed along with various contract prepayment and industrial groups as if they were all of the same type and pattern. In the chapter on scope and standards of service it is assumed that the same principles of "selection of personnel" are used in these varieties of organization, which is contrary to the facts. Although eight university and charitable or private reference clinics (under which are listed the Lahey and Mayo clinics), and only seven of the contract type are studied, most of the comments are given to the contract practice. There is a chapter on the appraisal of group medical service which is disappointingly indefinite.

Synopsis of Genitourinary Diseases. By Austin I. Dodson, M.D., F.A.C.S., Professor of Genitourinary Surgery, Medical College of Virginia, Richmond. Third edition. Fabrikoid. Price, $3.50. Pp. 302, with 112 illustrations. St. Louis: C. V. Mosby Company, 1941.

This book is divided into fourteen well arranged, compact chapters. The author gives the usual consideration to the general principles of urology and the methods used in arriving at an adequate diagnosis of urologic diseases, such as a careful history, physical examination and the various methods of urologic examination. In this edition, material on the application of sulfanilamide and its derivatives has been added and that on the etiology of urinary calculi rearranged. The discussions are clearcut, so that information is quickly obtained. As the title indicates and the author states, the book is a synopsis and as such is a ready and valuable addition to the book shelf of the busy practitioner. Likewise it has an appeal to the medical student as a handy review of urology. It is not a reference book, and little if any space is devoted to controversial theories. The information is sound.

Los Angeles County General Hospital House Staff Manual. By the Attending and House Staffs of the Los Angeles County General Hospital. Second edition. Paper. Price, $3. Pp. 181. Los Angeles, 1941.

This volume contains rules and regulations of the house staff and a list of therapeutic procedures compiled for the guidance of interns and resident physicians in the various clinical and laboratory divisions of the hospital. It follows the general plan of house staff regulations as required in all hospitals approved for intern training but is more extensive than the average manual of this type, since it is designed to meet the inpatient and emergency needs of one of the largest hospital services in the country. Other hospitals seeking guidance in the preparation of a suitable "procedure book" will find this manual exceedingly helpful.

Creative Group Work on the Campus: A Developmental Study of Certain Aspects of Student Life. By Louise Price, Ph.D. Teachers College, Columbia University Contributions to Education, No. 830. Published with the Approval of Professor Ruth Strang, Sponsor. Cloth. $3.25. Pp. 437. New York: Bureau of Publications, Teachers College, Columbia University, 1941.

From Stephens College and Stanford University comes this contribution to the study of certain aspects of student life. The investigation was made largely by the case method, although it is extensively documented with bibliography. This preliminary study leads the authors to recommend the development of specialized auxiliary services such as speech, posture and grooming, the addition of a staff capable of advising students on personal and group problems, including standards of participation in social and other leisure activities, and improvements in the faculty. Many new fields of research are proffered to institutions which wish to extend studies in these fields.

Doctor Wood: Modern Wizard of the Laboratory. The Story of an American Small Boy Who Became the Most Daring and Original Experimental Physicist of Our Day—But Never Grew Up. By William Seabrook. Cloth. Price, $3.75. Pp. 335, with 15 illustrations. New York: Harcourt, Brace & Company, 1941.

The ability of William Seabrook as a writer is here turned to the study of an eminent physicist whose work at Johns Hopkins University, particularly on the physics of light, has gained worldwide recognition. He did much to debunk scientific cranks and frauds, and many of his observations have been of aid in criminology. The book is supplemented by a bibliography of scientific publications of Professor Wood, including two hundred and sixty-three references, the latest in December 1941.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

MILK AS A PREVENTIVE OF LEAD POISONING

***To the Editor:*—Please advise whether the taking of large quantities of milk has any bearing on the prevention of lead poisoning. Is the giving of milk to lead workers a common practice in industry?**

Peter J. Dinatale, M.D., Batavia, N. Y.

ANSWER.—Few physicians will gainsay an advantage from the consumption of milk by workmen exposed to lead, not so much because milk has any specific action in preventing lead poisoning but because it is an excellent supplement dietary agent. While lead poisoning may arise with less frequency among workers exposed to lead who are supplied with milk, it may not be regarded as a specific preventive agent against lead poisoning. Supporters of a high daily milk intake point out that the calcium thus provided tends to immobilize the lead in bony structures, thus saving the body against its action. Antagonists believe that, even though this is true, any such calcium promoted storage merely defers the evil day when for other reasons the lead in larger quantities will be mobilized from body tissues in the blood stream and clinical lead poisoning will arise. Without necessarily referring to milk as such, many publications have been made on the influence of calcium on lead poisoning prevention and treatment. A number of such items later are cited. From them a few statements are now excerpted.

Lederer and Bing state that "the evidence that milk would be of value is largely presumptive" and "the amount of lead stored in the body is diminished by the addition of calcium carbonate to the diet," and, further, the beneficial effect of calcium appears to be due to the prevention of absorption of lead from the intestinal tract, but it is here noted that in the greater number of cases lead poisoning follows inhalation rather than absorption from the alimentary tract. However, Dannenberg and his associates, condemning the use of ascorbic acid, favor a high calcium-phosphorus diet, given along with other agents, in the treatment of lead poisoning. Sobel and his associates, in discussing the biochemical behavior of lead, note that the deposition of the metal in body tissues is directed by a system of its own, which is governed by the same laws as calcium deposition but not necessarily in the same direction. The effect of calcium on lead deposition is essentially competitive and apparently thus not desirable. Holmes and his associates have carried out extensive work with ascorbic acid, chiefly alone but at times combined with calcium and other agents. Apparently these authors attach greater significance to vitamin C than to calcium. In the treatment of lead poisoning, calcium in various forms has been used extensively, as reviewed by Johnstone. There appear to be good reasons for stating that the use of milk for lead workers is most commendable, but not as the keystone of a program for the prevention of lead poisoning.

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CHEMICALS USED IN CURING TOBACCO

***To the Editor:*—What chemicals are used to cure tobacco? Are they injurious to the human organism?**

J. A. Schurgot, M.D., Grafton, Ohio.

ANSWER.—Humidity, temperature, ventilation and pressure are the chief measures utilized in controlling the plant and microbic enzymatic processes which constitute the curing of tobacco. Constituents of the earth, added fertilizers or insecticides or their derivatives present in the raw tobacco may remain in the finished product or may be altered during the curing.

Chemicals used in manufacturing tobacco products vary with the type and brand of the product, and their identity is often kept secret. Sweetening agents, such as licorice, sugar and molasses, are added chiefly to chewing tobacco. Liquors containing salts may be used in wetting down pipe tobaccos. Flavoring agents like vanilla may be added to snuff. Hygroscopic materials, such as glycerin or glycols, are added to cigaret tobacco to keep it moist. Other agents may be added at times to affect the burning qualities, appearance, taste or smell of tobacco products.

Aside from literature on irritant aldehydes derived from hygroscopic agents, little has been published regarding added substances in ordinary tobacco products which may be of any hygienic significance as compared with the nicotine and the products of combustion of the tobacco itself.

CORONARY INSUFFICIENCY OR PAGET'S DISEASE?

***To the Editor:*—A man aged 45 has had severe pain in the chest for the past two months. He is a husky man who had never had a sick day in his life. Pain was indicated in the left upper quadrant of the chest radiating down to the left elbow. Attacks would come during walking but also during sleep. No substernal pressure or dyspnea was admitted. "Straightening up" the back either on standing or on sitting would help relieve the seizure, which in any event lasted only a minute or two. No sweating or apprehension was elicited. Administration of glyceryl trinitrate relieved the attack, but substitution of acetylsalicylic acid in pills of the same size also gave relief (probably because the attacks were so short lived anyway). The heart is normal on physical, roentgenographic, fluoroscopic and electrocardiographic examination. Numerous heart tracings were all negative. Tracings taken after exertion [walking up and down a flight of stairs] and breathing a mixture of a low concentration of oxygen show no significant changes in RS-T segments or T waves. A provocative test with epinephrine gave negative results. Cervical arthritis, hiatus hernia and mediastinal tumors have been reported absent on roentgen examination. An equivocal reaction to the Graham test was reported: there were no calcular shadows. The blood and blood pressure were normal. Neither pain in the shoulder on motion nor swelling (or atrophy of the hand) is present. On the positive side, a foreign body was found accidentally in the arm 3 cm. below the axillary fold. This was removed, with no change in the status. Evidence of proliferative osteitis (Paget's disease) was found in the right humerus, both clavicles and the scapula. The skull was normal. Attacks continue to recur in spite of rest in bed for three weeks. (There was no relief during the regimen of rest.) The administration of sedatives, xanthine drugs, and thiamine hydrochloride and local infiltration of the brachial plexus had no effect. Is this coronary insufficiency? In spite of a normal roentgenogram of the spine, can Paget's disease be responsible for the attacks of pain in the chest and in the arm?**

M.D., Connecticut.

ANSWER.—It seems most unlikely that this pain has its origin in a deficient coronary circulation. The lack of other symptoms of coronary artery disorder and the failure of the various tests to produce pain would argue strongly against a coronary origin.

The distribution of the pain to both the chest and the arm strongly suggests pressure on one of the sensory roots or possibly on one of the upper cervical sympathetic ganglions. If the diagnosis of Paget's disease is assured it is more than likely that the source of the pain lies in bony pressure. Severe cramping pain in muscle often accompanies Paget's disease. Straightening the back as a method of relief suggests pressure that may be relieved by change of position. It seems unlikely that the biliary tract can be responsible for the symptoms. Roentgenograms of soft tissue should be made to rule out the presence of calcareous deposits in the muscle as a source of irritation.

BACTERIOPHAGE THERAPY FOR TYPHOID

***To the Editor:*—I am reporting at our staff meeting a case of typhoid in a child of 14 months. I am sure that the bacteriophage will come up in the discussion. In reading what I can find on the subject, I am impressed by (1) the apparent success of the bacteriophage treatment in the cases reported by J. M. Frawley in *California and Western Medicine* (48: 415 [June] 1938) and (2) its complete disappearance as a therapeutic agent. Can you tell me the answer? 1. Was it found ineffectual? 2. Was it too dangerous? 3. Why, if it was useful, did it fall into disrepute? 4. Does anybody use it now?**

H. G. Bull, M.D., Ithaca, N. Y.

ANSWER.—The article referred to in *California and Western Medicine* deals with lysed vaccine, not bacteriophage. The results, obtained in only 4 cases, are not convincing, and no control tests were made. Numerous studies made with vaccines of various kinds have given suggestively good results, but many investigators believe that the effect is a nonspecific one.

A study of critical reports in THE JOURNAL by Eaton and Bayne-Jones (Dec. 8, 1934, p. 1769, December 15, p. 1847 and December 22, p. 1934) and by Krueger and Scribner (May 10, 1941, p. 2160, and May 17, p. 2269) will supply detailed answers

to all the questions raised with regard to the use of bacteriophage in the treatment of infectious diseases. According to Eaton and Bayne-Jones "the literature on the treatment of typhoid with bacteriophage indicates that this agent has, apparently, no striking effect on the course of the disease except perhaps on the production of reaction followed by temporary relief." Krueger and Scribner conclude that "bacteriophagy in vivo is of rare occurrence . . . therefore with few exceptions . . . it is not logical to rely on the lytic power of the phage in the treatment of disease."

In answer to the specific questions raised it may be said that:

1. Bacteriophage is generally found to be ineffectual; its effects are neutralized in vivo by dilution and by the presence of serum or pus.
2. It occasionally causes severe reactions.
3. It is not useful.
4. It is still used by various observers, chiefly in experimental studies.

DROOLING IN A CHILD

To the Editor:—**A girl aged 7½ years (premature at birth; she weighed 5 pounds [2.3 Kg.]), whose mother was eclamptic during pregnancy, had convulsions during the first month of life but has not had convulsions since. The chief complaint is excessive dribbling from the mouth. The child understands everything but does not attempt to say any words. She has been at school for two years. She has a severe squint and myopia; the head measures 17 inches (43 cm.) and the chest 23 inches (58 cm.). The child is normal in weight but 3 inches (7.6 cm.) shorter than average. Amphetamine sulfate, thyroid and atropine have been advised. Would anything else be beneficial?**

M.D., Canada.

ANSWER.—Dribbling or drooling from the mouth in a 7½ year old child is definitely abnormal and may arise from a variety of conditions, among which are mental deficiency and other organic or functional nervous disturbances. Judging from the history, one would suspect that the child had an organic brain lesion, possibly resulting from toxemia in the mother and prematurity in the infant. Convulsions during the first month of life frequently result from organic brain disease. The fact that the child does not talk at 7½ years further indicates an organic brain disturbance with or without mental backwardness. Before one attempts to treat the drooling, a thorough neurologic and psychiatric study should be made including spinal puncture and pneumoencephalography. The drooling is merely a symptom, which will not respond to thyroid therapy unless the child suffers from hypothyroidism, which does not seem likely. Atropine may inhibit the flow of saliva to a certain extent, especially if the drooling is secondary to hypersecretion.

If, however, the drooling is due to inability or to neglect in swallowing the saliva, only psychiatric therapy will avail, if the child is able to understand what is desired, and provided the swallowing reflexes are functioning properly.

LOW URETERAL STRICTURE AFTER URETEROLITHOTOMY

To the Editor:—**I have observed several cases of surgical removal of a stone from the lower portion of the ureter with a persistent urinary discharge at the operative site. In most cases a catheter could not be passed via the cystoscope and reoperation had to be done. What method is advocated to eliminate this complication?**

C. H. Whiting, M.D., New York.

ANSWER.—Factors which may contribute to this complication are (1) damage to the mucosa and the wall of the ureter caused by trauma from an impacted stone, (2) localized periureteritis at or near the site of the stone and (3) improper surgical technic. The most common cause of stricture following ureterolithotomy probably is overenthusiasm on the part of the surgeon in effecting closure of the ureter so that it will be water tight. Great care should be taken to avoid reducing the lumen of the ureter. It probably is advisable to place any stitch that is inserted in the ureter to close the opening made by the ureterolithotomy only in the adventitia and not through the entire ureteral wall. It is not necessary to close the opening of the ureter so that it is water tight. If there is evidence of trauma or infection of the ureter at the time of ureterolithotomy a ureteral catheter should be introduced into the ureter so that one end extends into the bladder and the other end extends up the ureter. When periureteritis is present or develops later, thorough drainage of the periureteral tissues is essential.

In case postoperative stricture is formed, the procedure to correct it depends largely on the condition of the kidney. If the site of the ureterolithotomy is low enough and if the stricture is impassable to a ureteral bougie, reimplantation of the ureter into the dome of the bladder may be tried. If the ureteral lesion is too high for this procedure, nephrectomy probably will be necessary. Nephrectomy would be indicated anyway in case of extensive infection or disease of the kidney.

PAINTS AND MULTIPLE SCLEROSIS

To the Editor:—**A man aged 35 has been engaged in spraying paint on automobile trucks for fifteen years. He sprays both the primer and the secondary coat. He wears a mask, but occasionally when without a mask he gets the fumes from adjacent sprayers. He now presents the typical findings of advanced multiple sclerosis. Can this syndrome be attributed to his occupation? I am aware that increased lead is found in the spinal fluid in patients with multiple sclerosis. I do not know that the paint spray contains lead.**

M.D., Illinois.

ANSWER.—In the query no mention is made of any of the symptoms present in a case of lead poisoning. These are anemia, abdominal pain, headache, a blue line on the gum, arteriosclerosis, basophilic degeneration of the red cells and lead deposits in the long bones. Lead can produce changes in the brain, spinal cord and peripheral nerves. These are in the form of an encephalopathy, myelopathy or neuropathy. There has been no clinical or pathologic proof that lead intoxication can cause the typical symptoms of multiple sclerosis. The lead found in the spinal fluid of patients with multiple sclerosis has not been in excess of that found in the fluid of other patients. The patient's syndrome, therefore, cannot be attributed to his occupation of spraying paint. Some paint sprays (for the primer and the secondary coat) contain lead and some do not.

ALCOHOLISM AND SYPHILIS

To the Editor:—**The combination in the same patient of chronic alcoholism and third stage syphilis is frequently observed in practice, most patients being men in their fifties and sixties. Is it wise to give thiamine and iodides at the same time? If so, is it possible to give the two substances in one prescription, and could you advise a good formula for such a prescription? The textbooks do not contain statements about the compatibility of vitamins with other drugs.**

M.D., Massachusetts.

ANSWER.—There is no reason why it would not be possible to give iodides before the meals and follow with the thiamine hydrochloride after the meals. With regard to a formula, it should be stated that what might be indicated for one patient would possibly be entirely out of order for another. The same would apply to the dosage. Both of these preparations may be used as indicated. We are not aware of either the presence or the absence of incompatibility between iodides and thiamine or of incompatibility with the other vitamins.

FISSURES ON TIPS OF FINGERS

To the Editor:—**A patient consulted me about small painful fissures which periodically develop on the tips of the fingers, more frequently on the thumb of the right hand, less frequently on the fingers of the right hand and least frequently on the fingers of the left hand. They usually occur on the lateral margin of the digits near the end of the nail, are tender and occasionally bleed. Not infrequently they are aggravated by an infection of the upper respiratory tract. They vary from 0.2 to 0.4 cm. in length, have sharp edges and strongly resemble knife cuts. Does the condition suggest a vitamin A or B deficiency?**

M.D., Massachusetts.

ANSWER.—Cases of the type described are common in winter. Often the condition is due to contact with external irritants, such as alcohol, soap and water, dye on clothing and occasionally the nickel plating of safety pins. (Downing reported such a case several years ago.) Cold weather and the frequent use of soap and water are contributory factors. Possibly, however, the dryness which causes the skin to fissure may be due to lack of vitamin A. The local use of an ointment such as the following is of considerable value:

	Gm. or Cc.
Tincture of benzoin compound	4
Salicylic acid	0.33
Hydrous wool fat and petrolatum	to make 30

The avoidance of soap and water, the use of acidolate in place of soap and the taking of fairly large doses of vitamin A should be of considerable help.

TREATMENT OF CARCINOMA OF THE CERVIX

To the Editor:—**Two years ago I saw a patient who had carcinoma of the cervix, which was proved by biopsy. This condition was treated with radium and high voltage roentgen therapy. There has been no recurrence during the past two years. Do you think a panhysterectomy is indicated?**

M.D., West Virginia.

ANSWER.—The prognosis with radium and high voltage roentgen therapy equals that of radical surgery in the treatment of carcinoma of the cervix. Unless there are unusual complications in this case there is no advantage to be gained from removal of the uterus. The cervix should be kept dilated and the patient examined from time to time, under anesthesia if necessary.